GENERAL REGISTER OFFICE

W. H. M. L.
REFERENCE ONLY

THE REGISTRAR GENERAL'S STATISTICAL REVIEW OF ENGLAND AND WALES FOR THE YEAR 1965

PART III COMMENTARY

LONDON
HER MAJESTY'S STATIONERY OFFICE
PRICE £1 13s. 6d. NET

GENERAL REGISTER OFFICE

STUDIES ON
MEDICAL AND POPULATION SUBJECTS

No. 20

Accuracy of Certification of Cause of Death

A report on a survey conducted in 1959 in 75 hospitals of the National Health Service to obtain information on the extent of agreement between clinical and post-mortem diagnoses

by

M. A. Heasman, M.R.C.S., L.R.C.P., D.P.H.

and

L. Lipworth, M.B., Ch.B., B.Sc.

The report of an investigation into the correlation between clinical and post-mortem diagnoses in which the clinicians and pathologists in 75 teaching and non-teaching hospitals in England and Wales participated.

The results of the inquiry in relation to national mortality statistics and to selected causes of death are discussed in the report.

Price **21s.** (*By post* **21s. 8d.**)

Published by

HER MAJESTY'S STATIONERY OFFICE

and obtainable from the Government Bookshops in London (post orders to P.O. Box 569, S.E.1), Edinburgh, Cardiff, Belfast, Manchester, Birmingham and Bristol, or through any bookseller

GENERAL REGISTER OFFICE

THE REGISTRAR GENERAL'S STATISTICAL REVIEW OF ENGLAND AND WALES FOR THE YEAR 1965

PART III COMMENTARY

WELLCOME INSTITUTE LIBRARY
Coll. welMOmec
Call No.

LONDON
HER MAJESTY'S STATIONERY OFFICE
1968

315237

TABLE OF CONTENTS

Page

Explanatory Notes ____ XIV

INTRODUCTION ____ 1

POPULATION ____ 2

National population estimates ____ 2

The estimates procedure ____ 2

The population change equation ____ 4

Change in home population ____ 10

Migration ____ 12

Distribution by sex, age and marital condition ____ 13

Sex ratios ____ 13
Age structure ____ 13
Marital status ____ 14

Revision of marital condition estimates ____ 14

Regional populations ____ 18

Revised Standard Regions ____ 18
Regional population change ____ 19
Armed Forces ____ 20
Inter-country migration ____ 20
Inter-regional migration ____ 20
North Region ____ 21
Yorkshire and Humberside ____ 22
North West Region ____ 22
East Midland Region ____ 23
West Midland Region ____ 24
East Anglia ____ 25
South East Region ____ 26
South West Region ____ 28
Wales and Monmouthshire ____ 28
Projections for the future ____ 29

Page

MIGRATION 30

External migration 30

Internal migration 34

MARRIAGES 39

BIRTHS 46

Introduction 46

Annual fluctuations in the number of births 47

The long-term trend in fertility 49

Fertility in 1965 59
Fertility rates by marriage duration and current age 59
Fertility rates by marriage age and year of marriage 60
Fertility rates by marriage age, year of marriage and size of family 64
Summary on legitimate fertility 70

Illegitimate births 71

GENERATION STUDY OF ILLEGITIMATE CHILDREN 74

The legal position 74

Method of study 75

Information required 76
Source of data 76
Illegitimate births 76
Deaths 76
Adoptions 76
Legitimations 79

Processing of information 80

Construction of Tables C36(A)-(O) 80

Discussion of results 83

Adoptions 83
Legitimation 83

Page

GENERAL MORTALITY 99

Notifiable diseases 99

Cancer 102

Diseases of the circulatory system 103

Infant mortality and stillbirths 103

Maternal mortality 105

Mortality at different ages since 1950 105

Asthma and other allergic disorders 127

Fibrocystic disease 128

Method of certification and place of death 129

Children under 5 years of age 139
Certification of death according to regions 141
Summary 143

REGIONAL MORTALITY 144

Area Comparability Factors (ACFs) 144

Determination of population of local areas 144
Calculation of indirect standardisation factor 145
Correction for institutions 146
Death ACFs 146
ACF and SMR 146

Mortality differentials by region and by population aggregation 148

Mortality from malignant neoplasms 149

Cancer of the lung 150
Cancer of the oesophagus 151
Cancer of the stomach 151
Cancer of the larynx 151
Cancer of the breast 151
Cancer of the neck of uterus 152
Cancer of body and other parts of uterus 152
Cancer of prostate 152
Cancer of bladder 152
Lymphosarcoma and reticulosarcoma 152
Leukaemia 152

REGIONAL MORTALITY - *(continued)* *Page*

Other diseases 152

Vascular disease affecting the central nervous system 152
Chronic rheumatic heart disease 153
Chronic endocarditis not specified as rheumatic 153
Arteriosclerotic heart disease 153
Other myocardial degeneration 153
Other diseases of the heart 154
Hypertension, with or without heart disease 154
Bronchitis 154

Reasons for differences in mortality 154

Urban/rural differences 155

GREATER LONDON 172

London boroughs 175

MATERNAL, FOETAL AND INFANT MORTALITY 183

Maternal mortality 183

Associated mortality 185

Stillbirths 187

Causes of stillbirths and loss of infant life 187
Stillbirth rate and place of confinement 192
Regional differences in causes of stillbirth 193

Congenital malformations 195

Congenital malformations of circulatory system 202

DEATHS FROM ACCIDENTS AND VIOLENCE 204

Deaths in working places 204

Suicide 208

Page

MISCELLANEOUS 211

Tetanus 211

Deaths associated with vaccination or other prophylactic inoculation 212

Mass miniature radiography 213

Therapeutic misadventures 222

UNITED KINGDOM 243

Vital statistics 243

APPENDICES

A. Fertility rates by birth order, 1964-1965, England and Wales 245

B. Standard regions and conurbations of Great Britain as at 1st April 1966 247

C. Articles and papers by Officers of the General Register Office published during 1965 248

D. Index to statistical Reviews Part III (Commentary volumes) 1950 to 1964 250

TABLES

	Period	Table	Page
POPULATION			
Estimated population, female	mid-1965	C1	5
Approximation of deaths, by age	mid-1965	C2	8
Estimated population	from mid-1951	C3	9
Analysis of home population differences	from mid-1960	C4	10
Natural increase	from 1911-30	C5	12
Proportional age distribution of population	1911, 1931, 1951, 1965 and 2001	C6	13
Proportions married, by sex and age	1931, 1951, 1963, 1964 and 1965	C7	14
Marital condition of population	mid-1957	C8(A)	15
	mid-1961	C8(B)	15
	mid-1962	C8(C)	16
	mid-1963	C8(D)	16
	mid-1964	C8(E)	17
	mid-1965	C8(F)	17
MIGRATION			
Age distribution of net migration of United Kingdom	from 1963	C9	31
Net migration of United Kingdom, age and marital status	from 1964	C10	31
Estimated net intake or outflow of categories of migrants	from mid-1960	C11	33
Change in sex-age structure	from mid-1964	C12	34
Estimated net migration into or out of home population	from mid-1961	C13	35
Migration, natural increase, and rate of change	from mid-1962 to mid-1966	C14	37
MARRIAGES			
Women married once only:			
By age at marriage	Census 1961	C15	39
By date and age at marriage	Census 1961	C16	41
By socio-economic group	Census 1961	C17	42

	Period	Table	Page
BIRTHS			
Analysis of live births	from 1951	C18	47
Mean ultimate family size, women aged 20-24 at marriage	from 1860	C19	49
Median intervals, marriage to last birth	from 1900-09	C20	50
Estimated intervals, marriage to last birth, and average intervals per child	-	C21	50
Estimated average intervals, marriage to last birth	-	C22	51
Estimated childbearing period	from 1860	C23	52
Distribution of occupational status of boys	Census 1851	C24	53
Adjusted distribution of occupational status of boys	Census 1851	C25	54
Derived expectation, childhood of boys	Census 1851	C26(A)	54
	Census 1961	C26(B)	55
Length of childhood for boys	from 1851	C27	55
Estimated period of parenthood, selected cohorts	from 1860	C28	56
Estimated total experience of parenthood	from 1860	C29	57
Fertility rates:			
Percentage change	from 1955-62	C30	60
Difference	from 1954-55	C31	62
Count of minus signs appearing in Table C31:			
For all durations 10 years or less only	from 1954-55	C32	63
For durations up to 5 years, and 6 to 10 years	from 1954-55	C33	63
Total for all marriage durations of fertility rates	from 1951-52	C34	65
GENERATION STUDY OF ILLEGITIMATE CHILDREN			
Arrangement of events occurring to male children	1927-1932	C35	81
Change of status of illegitimate children whilst minors:			
Males	1927-1932	C36(A)	87
Females	1927-1932	C36(B)	88
Males	1933-1939	C36(C)	89
Females	1933-1939	C36(D)	90
Males	1940-1945	C36(E)	91
Females	1940-1945	C36(F)	92
Males	1946-1949	C36(G)	93
Females	1946-1949	C36(H)	94
Males	1950-1954	C36(J)	95
Females	1950-1954	C36(K)	96

GENERATION STUDY OF ILLEGITIMATE CHILDREN - *(continued)*

	Period	Table	Page
Males	1955-1959	C36(L)	97
Females	1955-1959	C36(M)	97
Males	1959-1963	C36(N)	98
Females	1959-1963	C36(O)	98

GENERAL MORTALITY

Death rates, and percentage change, by sex and age:			
All causes	from 1950	C37(A)	106
Infective and parasitic diseases	from 1950	C37(B)	106
Neoplasms	from 1950	C37(C)	107
Diseases of the nervous system and sense organs	from 1950	C37(D)	108
Diseases of the circulatory system	from 1950	C37(E)	108
Respiratory diseases	from 1950	C37(F)	109
Diseases of the digestive system	from 1950	C37(G)	110
Genito-urinary diseases	from 1950	C37(H)	111
Accidents, poisonings, and violence	from 1950	C37(J)	112
Percentage change, death rates due to accidents and violence	since 1950	C38	112
Death rates from principal causes, by sex and age	1950, 1955, 1960 and 1965	C39	113
Deaths due to:			
Asthma	from 1959	C40	127
Other allergic disorders	from 1959	C41	128
Deaths associated with fibrocystic disease	1965	C42	128
Deaths certified in various ways	from 1962	C43	129
Deaths from all causes and percentage distribution for selected causes, according to method of certification	from 1962	C44	130
Deaths by type of place in which they occurred	from 1962	C45	131
Post-mortem examinations and percentages, by cause and place of death	1965	C46	132
Causes of death for which post-mortem examination is carried out:			
More frequently in hospital than elsewhere	1965	C47	136
Less frequently in hospital than elsewhere	1965	C48	137
Post-mortem examinations:			
By place of death, and geographical location	1965	C49	138
Children under 5 years of age	1965	C50	140
Outstanding causes of death	1965	C51	142

	Period	Table	Page
REGIONAL MORTALITY			
Example of calculation of "death alpha"	-	C52	147
Regression of mortality upon population aggregation as percentage of mean death-rates	1963-1965	C53	156
Bronchitis, death rates by age and type of area	1958-1960 and 1963-65	C54	157
Standardised Mortality Ratios, selected causes, regional	1961-1965	C55	158
Age specific death rates, selected causes, regional	1963-1965	C56	160
London Boroughs:			
Approximate composition, in terms of former boroughs	1965	C57	173
Indexes based on rateable values	1965-1966	C58	178
Historical vital statistics	1959-1961, 1962-1964 and 1965	C59	179
Death rates for selected causes	1959-1961, 1962-1964 and 1965	C60	180
MATERNAL, FOETAL AND INFANT MORTALITY			
Maternal mortality:			
Principal causes	from 1931-35	C61	184
Abortion	from 1931-35	C62	185
Associated causes, and by age	from 1961	C63	186
Births, and infant deaths by specified age-groups	from 1961	C64	187
Stillbirth and infant death rates by specified age-groups	from 1961	C65	188
Comparison of causes, perinatal and later infant deaths	from 1961	C66	190
Stillbirth rates:			
By parity and place of confinement	1965	C67	192
Hospital Board Regions by place of confinement	1965	C68	193
For selected causes, regional	1961-1965	C69	196
By parity and hospital region of confinement	1965	C70	197
Congenital malformations, quarterly notification rates:			
Summary	1965	C71	198
By site	from 1964	C72	199
Deaths, and rates due to congenital malformations of the circulatory system	from 1951	C73	203

	Period	Table	Page
DEATHS FROM ACCIDENTS AND VIOLENCE			
Accidental gassing associated with work and working places	from 1961	C74	205
Accidental deaths, by place of occurrence, sex and age:			
At work	from 1961	C75(A)	205
Mine and quarry	from 1961	C75(B)	206
In industrial places and premises	from 1961	C75(C)	207
Deaths, caused by machinery classified by nature of injury	from 1961	C76	207
Suicide, death rates and Standardised Mortality Ratios	from 1961	C77	208
Suicide death rates, by sex and age, regional	1956-1960 and 1961-65	C78	209
MISCELLANEOUS			
Tetanus deaths, by sex and age	from 1961	C79	211
Mass miniature radiography:			
Examinations by category, comparison	1955 and 1965	C80	214
Examinations by category, by sex and age	1965	C81	216
Cases of respiratory tuberculosis observed	1965	C82	218
Non-tuberculous conditions subsequently diagnosed	1965	C83	220
Fatal therapeutic misadventures:			
Adverse reaction to drug or therapy	1965	C84	224
Overdose of drugs	1965	C85	234
Mistake in drug administration	1965	C86	235
Accident in technique	1965	C87	235
Summary	from 1960	C88	242
Adverse reaction to drug or therapy - summary	from 1957	C89	242
UNITED KINGDOM			
Vital statistics	1938 and from 1946	C90	243

DIAGRAMS

	Period	*Number*	*Page*
POPULATION			
Diagrammatic estimation of that percentage of infants who died aged under 1 year, who would have attained their 1st birthday by the estimate day	from mid-1964	1	7
BIRTHS			
Fluctuations about the trend in the annual number of births	from 1952	2	48
Total for all marriage durations of fertility rates per 1,000 women married once only:			
Marriage age under 20 years	from 1951-52	3A	66
Marriage age 20 to 24 years	from 1951-52	3B	67
Marriage age 25 to 29 years	from 1951-52	3C	68
Marriage age 30 to 34 years	from 1951-52	3D	69
Illegitimate births per 1,000 single, widowed and divorced women	from 1955	4	72
GENERATION STUDY OF ILLEGITIMATE CHILDREN			
Method of relating adoptions to successive generations	from 1927	5	78
GENERAL MORTALITY			
Crude annual death rates per 1,000 living, and Standardised Mortality Ratios	from 1950	6	100
Annual death rates per 1,000 living, by quarters, in each year	from 1956	7	101
Infant mortality rates per 1,000 live births in the neonatal periods and stillbirth rates per 1,000 total births	from 1945	8	104
REGIONAL MORTALITY			
Map of GREATER LONDON showing City of London and London boroughs	-	9	182

EXPLANATORY NOTES

1. New changes in presentation

A number of tables which have previously appeared frequently or regularly in the Commentary volume of the *Statistical Review* have been transferred, with effect from 1965, to become regular tables in Parts I and II of the *Review*. Details of the tables so transferred and of their new numbers have been published in the Explanatory Notes of the two volumes concerned.

2. Populations

The estimates of population appearing in this volume and described as "home", "total" or "civilian" have the following content:

Home population - the population, of all types, actually in England and Wales, distributed by area according to residence.

Total population - the home population *plus* members of H.M. Forces belonging to England and Wales and serving overseas but *minus* the Forces of other countries temporarily in England and Wales.

Civilian population - the total population *minus* members of H.M. Forces belonging to England and Wales at home or overseas.

3. Stillbirths

Classification of stillbirths by cause is according to the Supplementary List, set out on pages 336-348 of the *International Statistical Classification of Diseases, Injuries and Causes of Death*, 1955* (Seventh Revision), with further sub-division of certain rubrics, and as modified by the following changes of assignment:

Cause of stillbirth	Rubrics to which cause is assigned	
	(i) in International Classification	(ii) in Statistical Review
Patent ductus arteriosus	39.5	38.41
Patent foramen ovale		38.43
Congenital heart condition NOS		38.45
Foetal heart condition NOS		38.45

*Manual obtainable from Her Majesty's Stationery Office, price 35s. 0d. net.

4. Numbering of tables

Of the tables referred to in this *Review*, those numbered in Arabic numerals (without prefix) will be found in "Part I, Tables, Medical" and those lettered will be found in "Part II, Tables, Population" for the year in question, while those numbered in Arabic numerals with the prefix C appear in this volume.

5. Standardised mortality comparison

The Comparative Mortality Index introduced in 1942 has since 1958 been replaced by a Standardised Mortality Ratio which shows the number of deaths registered in the year of experience as a percentage of those which would have been expected in that year had the sex/age mortality of a standard period (1950-1952) operated on the sex/age population of the year of experience.

6. Indication of reliability

Rates given as 0 indicate that the actual rate is less than one half a unit. A dash (-) in any cell indicates that there were no events. Where a cell has been left blank no denominator is available.

Rates calculated from less than 20 events are distinguished by italic type as a warning to the user that the smallness of the experience may affect their reliability as a measure.

Numbers

If d represents the deaths in an area and p the population in that area then, if d/p is small, the standard error (s.e.) of d is approximately $\sqrt{d}$ assuming that the deaths are independent of one another. Clearly, the larger the number of deaths the smaller will be the proportionate variability. A deviation either way of twice the s.e. may be expected about once in 20 times. Using this criterion one might expect towns each averaging 20 deaths per year to yield in the same year numbers ranging between 11 and 29 without such differences having any statistical significance. Alternatively it could be said that if 20 deaths were recorded for a town, this number would have a 95 per cent confidence interval of approximately ±9, there being a 95 per cent chance that the underlying mortality is represented by a number of deaths within this interval.

If d is thought to be an extreme variation it would be more reliable to use as the standard error not $\sqrt{d}$ but $\sqrt{d'}$ where d' is the number of deaths expected if some standard rate (e.g. the national rate) were applied.

Rates

The appropriate standard error of a death rate when d represents the number of deaths and p the population is

$$\frac{\sqrt{d}}{p} \quad \text{or} \quad \frac{m}{\sqrt{d}}$$

where m is the death rate. The difference between two local death rates m_1 and m_2 can be regarded as significant only if it amounts to more than twice the standard error of the difference, viz.

$$2\sqrt{\left(\frac{m_1^2}{d_1} + \frac{m_2^2}{d_2}\right)}$$

Comparison of adjusted rates

Before comparisons are made, other known sources of variation (such as differences in the sex and age composition of the population) must be removed. If C is the local death Area Comparability Factor (see p. 144, this volume) then mC is to be compared with m', the national death rate. The s.e. of mC is

$$C\sqrt{\left(\frac{m}{p}\right)}$$

and

$$mC \pm 2C\sqrt{\left(\frac{m}{p}\right)}$$

is to be compared with m'. As already indicated, m' can be used instead of m in the calculation of the s.e.; m' has the advantage of itself having only a small sampling error.

7. Abbreviations

A.C.	administrative county.
C.B.	county borough.
M.B.	municipal borough.
L.B.	London borough.
U.D.	urban district.
R.D.	rural district.
Greater London	the Greater London Council Area, comprising the City of London (including the Inner and Middle Temple) and the London boroughs.

8. Regions

The constitution and naming of the standard regions of England and Wales was changed at the beginning of 1965. Those used in this volume are composed as follows:-

North	West Midland	South West
Cumberland	Herefordshire	Cornwall
Durham	Shropshire	Devon
Northumberland	Staffordshire	Dorset, Part of[1]
Westmorland	Warwickshire	Gloucestershire
Yorkshire, North Riding	Worcestershire	Somerset
		Wiltshire
Yorkshire and Humberside	**East Anglia**	**Wales I (South East)**
Lincolnshire, Parts of Lindsey, Part of[2]	Cambridgeshire and Isle of Ely	Breconshire
Yorkshire, East Riding	Huntingdon and Peterborough	Carmarthenshire
Yorkshire, West Riding	Norfolk	Glamorgan
	Suffolk, East	Monmouthshire
North West	Suffolk, West	**Wales II (Remainder)**
Cheshire	**South East**	Anglesey
Derbyshire, Part of[3]		Caernarvonshire
Lancashire	Bedfordshire	Cardiganshire
	Berkshire	Denbighshire
East Midland	Buckinghamshire	Flintshire
Derbyshire, Part of[4]	Dorset, Part of[6]	Merionethshire
Leicestershire	Essex	Montgomeryshire
Lincolnshire	Greater London	Pembrokeshire
Parts of Holland	Hampshire	Radnorshire
Parts of Kesteven	Hertfordshire	
Parts of Lindsey, Part of[5]	Kent	
Northamptonshire	Oxfordshire	
Nottinghamshire	Surrey	
Rutland	Sussex, East	
	Sussex, West	
	Wight, Isle of	

1 All except Poole M.B.
2 All except Lincoln C.B.
3 Buxton M.B., Glossop M.B., New Mills U.D., Whaley Bridge U.D., Chapel en le Frith R.D.
4 All except areas in 3 above.
5 Lincoln C.B. only.
6 Poole M.B. only.

9. Outer Metropolitan Area

The part of the South East Region outside Greater London is split in some tables into Outer Metropolitan area and Remainder of South East. The composition of the Outer Metropolitan area is as follows:-

Hertfordshire

Surrey

Buckinghamshire, Part of

Aylesbury M.B.
Beaconsfield U.D.
Bletchley U.D.
Chesham U.D.
Eton U.D.
High Wycombe M.B.
Marlow U.D.
Slough M.B.
Amersham R.D.
Aylesbury R.D.
Eton R.D.
Wing R.D.
Wycombe R.D.

Kent, Part of

Chatham M.B.
Dartford M.B.
Gillingham M.B.
Gravesend M.B.
Maidstone M.B.
Northfleet U.D.
Rochester M.B.
Royal Tunbridge Wells M.B.
Sevenoaks U.D.
Southborough U.D.
Swanscombe U.D.
Tonbridge U.D.
Dartford R.D.
Maidstone R.D.
Malling R.D.
Sevenoaks R.D.
Strood R.D.
Tonbridge R.D.

Bedfordshire, Part of

Luton C.B.
Dunstable M.B.
Leighton - Linslade U.D.
Luton R.D.

Berkshire, Part of

Reading C.B.
Maidenhead M.B.
New Windsor M.B.
Wokingham M.B.
Bradfield R.D.
Cookham R.D.
Easthampstead R.D.
Windsor R.D.
Wokingham R.D.

Essex, Part of

Southend-on-Sea C.B.
Basildon U.D.
Benfleet U.D.
Brentwood U.D.
Canvey Island U.D.
Chelmsford M.B.
Chigwell U.D.
Epping U.D.
Harlow U.D.
Rayleigh U.D.
Thurrock U.D.
Waltham Holy Cross U.D.
Chelmsford R.D.
Epping and Ongar R.D.
Rochford R.D.

Hampshire, Part of

Aldershot M.B.
Farnborough U.D.
Fleet U.D.
Hartley Wintney R.D.

Oxfordshire, Part of

Henley-on-Thames M.B.
Henley R.D.

Sussex, East, Part of

Burgess Hill U.D.
Cuckfield U.D.
East Grinstead U.D.
Cuckfield R.D.
Uckfield R.D.

Sussex, West, Part of

Crawley U.D.
Horsham U.D.
Horsham R.D.

10. Conurbations

The conurbation areas each consist of an aggregation of entire local authority areas and are constituted as follows:-

Tyneside

Durham (part)

Gateshead C.B.
South Shields C.B.

Felling U.D.
Hebburn U.D.
Jarrow M.B.
Whickham U.D.

Northumberland (part)

Newcastle-upon-Tyne C.B.
Tynemouth C.B.

Gosforth U.D.
Longbenton U.D.
Newburn U.D.
Wallsend M.B.
Whitley Bay M.B.

West Yorkshire

Yorkshire, West Riding (part)

Bradford C.B.
Dewsbury C.B.
Halifax C.B.
Huddersfield C.B.
Leeds C.B.
Wakefield C.B.

Aireborough U.D.
Baildon U.D.
Batley M.B.
Bingley U.D.
Brighouse M.B.
Colne Valley U.D.
Denby Dale U.D.
Denholme U.D.
Elland U.D.
Heckmondwike U.D.
Holmfirth U.D.

Horbury U.D.
Horsforth U.D.
Keighley M.B.
Kirkburton U.D.
Meltham U.D.
Mirfield U.D.
Morley M.B.
Ossett M.B.
Pudsey M.B.
Queensbury and Shelf U.D.
Ripponden U.D.

Rothwell U.D.
Shipley U.D.
Sowerby Bridge U.D.
Spenborough M.B.
Stanley U.D.

South East Lancashire

Cheshire (part)

Stockport C.B.

Alderley Edge U.D.
Altrincham M.B.
Bowdon U.D.
Bredbury and Romiley U.D.
Cheadle and Gatley U.D.

Dukinfield M.B.
Hale U.D.
Hazel Grove and Bramhall U.D.
Hyde M.B.

Marple U.D.
Sale M.B.
Stalybridge M.B.
Wilmslow U.D.

Disley R.D.

Lancashire (part)

Bolton C.B.
Bury C.B.
Manchester C.B.
Oldham C.B.
Rochdale C.B.
Salford C.B.

Ashton-under-Lyne M.B.
Audenshaw U.D.
Chadderton U.D.
Crompton U.D.
Denton U.D.

Droylsden U.D.
Eccles M.B.
Failsworth U.D.
Farnworth M.B.
Heywood M.B.

Horwich U.D.
Irlam U.D.
Kearsley U.D.
Lees U.D.
Littleborough U.D.
Little Lever U.D.
Middleton M.B.

Milnrow U.D.
Mossley M.B.
Prestwich M.B.
Radcliffe M.B.
Royton U.D.

Stretford M.B.
Swinton and Pendlebury M.B.
Tottington U.D.
Urmston U.D.
Wardle U.D.

Westhoughton U.D.
Whitefield U.D.
Whitworth U.D.
Worsley U.D.

Merseyside

Cheshire (part)		*Lancashire (part)*
Birkenhead C.B.	Ellesmere Port M.B.	Bootle C.B.
Wallasey C.B.	Hoylake U.D.	Liverpool C.B.
	Neston U.D.	
Bebington M.B.	Wirral U.D.	Crosby M.B.
		Huyton-with-Roby U.D.
		Litherland U.D.

West Midlands

Staffordshire (part)		*Warwickshire (part)*
Smethwick C.B.	Darlaston U.D.	Birmingham C.B.
Walsall C.B.	Rowley Regis M.B.	Solihull C.B.
West Bromwich C.B.	Sedgley U.D.	
Wolverhampton C.B.	Tettenhall U.D.	Sutton Coldfield M.B.
	Tipton M.B.	
Aldridge U.D.		*Worcestershire (part)*
Amblecote U.D.	Wednesbury M.B.	
Bilston M.B.	Wednesfield U.D.	Dudley C.B.
Brierley Hill U.D.	Willenhall U.D.	
Coseley U.D.		Halesowen M.B.
		Oldbury M.B.
		Stourbridge M.B.

Greater London

Greater London Council Area

II. Hospital regions

The hospital regions presented in this volume consist of aggregations of entire local authority areas. They are identical with the areas of regional hospital boards except where the boundaries of the latter divide local authority areas. Any such divided local authority area is allocated to the hospital region containing the greater proportion of the population.

Newcastle

Cumberland	*Yorkshire, North Riding (part)*	
Durham	Middlesbrough C.B.	Skelton and Brotton U.D.
		Thornaby-on-Tees M.B.
Northumberland	Eston U.D.	
	Guisborough U.D.	Croft R.D.
Westmorland (part)	Loftus U.D.	Northallerton R.D.
	Northallerton U.D.	Reeth R.D.
Appleby M.B.	Redcar M.B.	Richmond R.D.
	Richmond M.B.	Startforth R.D.
North Westmorland R.D.	Saltburn and Marske-by-Sea U.D.	Stokesley R.D.

Leeds

Yorkshire, East Riding

Yorkshire, North Riding (part)
(except areas stated in Newcastle Region)

Yorkshire, West Riding (part)
(except areas stated in Sheffield Region)

Sheffield

Leicestershire

Lincolnshire
Parts of Holland
Parts of Lindsey

Nottinghamshire

Derbyshire (part)
(except areas stated in Manchester Region)

Lincolnshire
Parts of Kesteven *(part)*
(except areas stated in East Anglia Region)

Rutland (part)

Oakham U.D.
Oakham R.D.
Uppingham R.D.

Yorkshire, West Riding (part)

Barnsley C.B.
Doncaster C.B.
Rotherham C.B.
Sheffield C.B.

Adwick-le-Street U.D.
Bentley with Arksey U.D.
Conisbrough U.D.
Cudworth U.D.
Darfield U.D.

Darton U.D.
Dearne U.D.
Dodworth U.D.
Hoyland Nether U.D.
Maltby U.D.

Mexborough U.D.
Penistone U.D.
Rawmarsh U.D.

Royston U.D.
Stocksbridge U.D.
Swinton U.D.
Tickhill U.D.

Wath-upon-Dearne U.D.
Wombwell U.D.
Worsbrough U.D.

Doncaster R.D.
Kiveton Park R.D.
Penistone R.D.
Rotherham R.D.

Thorne R.D.
Wortley R.D.

East Anglia

Cambridge and Isle of Ely

Huntingdon and Peterborough

Norfolk

Suffolk, East

Suffolk, West

Essex (part)

Saffron Walden M.B.
Saffron Walden R.D.

Hertfordshire (part)

Royston U.D.

Lincolnshire
Parts of Kesteven *(part)*

Stamford M.B.
Bourne U.D.
South Kesteven R.D.

Rutland (part)

Ketton R.D.

North West Metropolitan

Bedfordshire

Hertfordshire (part)
(except areas stated in East Anglia and North East Metropolitan Regions)

Surrey (part)

Sunbury-on-Thames U.D.
Staines U.D.

Berkshire (part)

Maidenhead M.B.
New Windsor M.B.
Cookham R.D.
Easthampstead R.D.
Windsor R.D.

Buckinghamshire (part)

Beaconsfield U.D.
Eton U.D.
Slough M.B.
Eton R.D.

Greater London (part)

Barnet L.B.
Brent L.B.
Camden L.B.
Ealing L.B.
Haringey L.B.
Harrow L.B.
Hillingdon L.B.
Hounslow L.B.
Islington L.B.
Richmond-upon-Thames L.B.
Westminster L.B.

North East Metropolitan

Essex (part)
(except areas stated in East Anglia Region)

Hertfordshire (part)

Bishop's Stortford U.D.
Cheshunt U.D.
Hertford M.B.
Hoddesdon U.D.
Sawbridgeworth U.D.

Hertfordshire (part) - ctd.

Ware U.D.
Braughing R.D.
Hertford R.D.
Ware R.D.

Greater London (part)

City of London
Inner and Middle Temple

Greater London (part) - ctd.

Barking L.B.
Enfield L.B.
Hackney L.B.
Havering L.B.
Newham L.B.
Redbridge L.B.
Tower Hamlets L.B.
Waltham Forest L.B.

South East Metropolitan

Kent

Sussex, East

Greater London (part)

Bexley L.B.
Bromley L.B.
Greenwich L.B.
Lewisham L.B.
Southwark L.B.

South West Metropolitan

Surrey (part)
(except areas stated in North West Metropolitan Region)

Sussex, West

Hampshire (part)

Aldershot M.B.
Farnborough U.D.
Fleet U.D.

Greater London (part)

Croydon L.B.

Greater London (part) - ctd.

Hammersmith L.B.
Kensington and Chelsea L.B.
Kingston-upon-Thames L.B.
Lambeth L.B.
Merton L.B.
Sutton L.B.
Wandsworth L.B.

Wessex

Wight, Isle of	*Wiltshire (part)*
Dorset (part) *(all areas except Lyme Regis M.B.)*	Salisbury M.B. Wilton M.B. Amesbury R.D.
Hampshire (part) *(except areas stated in South West Metropolitan Region)*	Mere and Tisbury R.D. Salisbury and Wilton R.D.

Oxford

Northamptonshire	*Gloucestershire (part)*	*Wiltshire (part)*
Oxfordshire	Cirencester U.D.	Marlborough M.B. Swindon M.B.
Berkshire (part) *(except areas stated in North West Metropolitan Region)*	Cirencester R.D. North Cotswold R.D. Northleach R.D.	Cricklade and Wootton Bassett R.D. Highworth R.D. Marlborough and Ramsbury R.D. Pewsey R.D.
Buckinghamshire (part) *(except areas stated in North West Metropolitan Region)*		

South Western

Cornwall. Devon. Somerset.	*Gloucestershire (part)* *(except areas stated in Oxford Region)*
Dorset (part) Lyme Regis M.B.	*Wiltshire (part)* *(except areas stated in Wessex and Oxford Regions)*

Welsh

All areas in Wales including Monmouthshire

Birmingham

Herefordshire *Shropshire* *Staffordshire* *Warwickshire* *Worcestershire*

Manchester

Cheshire (part) *(except areas stated in Liverpool Region)*	*Derbyshire (part)*
Lancashire (part) *(except areas stated in Liverpool Region)*	Buxton M.B. Glossop M.B. New Mills U.D. Whaley Bridge U.D.
Westmorland (part) *(except areas stated in Newcastle Region)*	Chapel en le Frith R.D.

Liverpool

Cheshire (part)	*Lancashire (part)*	
Birkenhead C.B.	Bootle C.B.	Litherland U.D.
Chester C.B.	Liverpool C.B.	Newton-le-Willows U.D.
Wallasey C.B.	St. Helens C.B.	Ormskirk U.D.
	Southport C.B.	Prescot U.D.
Bebington M.B.	Warrington C.B.	Rainford U.D.
Ellesmere Port M.B.		Skelmersdale U.D.
Hoylake U.D.	Crosby M.B.	Widnes M.B.
Lymm U.D.	Formby U.D.	
Neston U.D.	Golborne U.D.	Warrington R.D.
Runcorn U.D.	Haydock U.D.	West Lancashire R.D.
	Huyton with Roby U.D.	Whiston R.D.
Wirral U.D.	Kirkby U.D.	
Chester R.D.		
Runcorn R.D.		
Tarvin R.D.		

12. Urban and rural aggregates

These aggregates comprise (a) the six conurbations combined, (b) the aggregates of urban local authority areas outside the conurbations in three groups according to the size of their resident population at the 1961 Census and (c) the aggregate of rural local authority areas outside the conurbations. Urban areas include boroughs and urban districts as defined by the Local Government Acts, and rural areas are rural districts as similarly defined.

13. Assignment of vital statistics by area

In all tables births and stillbirths are classified according to the area of usual residence of the mother, and deaths to the area of usual residence of the deceased, if this is within England and Wales; if not, to the area of occurrence. Accommodation provided under Parts III and IV of the National Assistance Act, 1948, is regarded as the place of residence of persons dying there. Before 1st January, 1958, chronic sick and psychiatric hospitals were similarly treated for this purpose but from that date the method of classification was modified, the main change being that a death in such a hospital is now assigned to the area of occurrence only if the deceased had been there six months or more. If the deceased had been there less than six months the death is transferred to the area of previous usual residence.

14. Index

An index has been compiled of the principal subjects of comment and the major tabulations in the Commentary volumes of the *Statistical Review* for the years 1950 to 1964 inclusive. This is included in the current volume and future revisions of the index will be published in subsequent volumes.

15. General

See also the Explanatory Notes to the Tables Volumes, Parts I and II.

INTRODUCTION

The *Registrar General's Statistical Review* for 1965 is completed by the addition of this commentary to the two volumes of medical and population statistics already published. This volume contains fewer annual tabulations than its predecessors. Consequent upon the introduction of automatic data processing it has been found possible to achieve earlier publication for such material by including it, in some cases in a slightly altered form, within one or other of the tables volumes. A complete list of transferred tables is included in the Explanatory Notes contained in each tables volume of the *Review*.

The year 1965 was marked by radical alterations in the local government arrangements for the Greater London area and the opportunity is taken in this volume to discuss the effect of these changes and to provide a means of comparing statistics for the component administrative areas before and after the changes. Changes in methodology prompt a discussion of the methods of calculating, Area Comparability Factors, which, when applied to crude rates for individual areas, take account of the varying sex and age constitution of their populations and, for deaths, of the presence in them of residential institutions.

Other medical subjects to which special attention is given include the pattern of mortality at different ages in the different regions and population aggregations of England and Wales and from specific causes, for example, from asthma, fibrocystic disease and malignant neoplasms.

So far as population matters are concerned, comment ranges widely over such subjects as migration, long term trends in fertility and a special generation study of illegitimate births.

General Register Office
Somerset House
LONDON, W.C.2

June 1967

POPULATION

National population estimates

The reasons for preparing three separate assessments of the population of England and Wales at each mid-year were discussed on pages 2 and 3 of the 1961 Commentary and page 2 of that for 1962 and they are defined on page xiv of this volume. Briefly, the *home* population includes everyone physically present in the country and excludes everybody else. The *total* population ignores the presence here of the armed forces of other countries, but includes the England and Wales share of H.M. Forces stationed outside the area. The *civilian* population is self-explanatory. Although no evidence of any misunderstanding of the nature of the three populations has recently come to light, difficulty in grasping the relationship between the elements in total population change and those in home population change and civilian population change has become apparent, and several enquiries have been made over the difference between figures resulting from the subtraction of one mid-year estimate of the total population of England and Wales from its successor and the sum of published natural increase figures and those of net migration for the same period.

For example, the change in total population between mid-1963 and mid-1964 appears, from the difference between the two relevant estimates on page 2 of the 1964 Commentary, to be + 382 thousand persons, whereas the sum of the natural increase figure on page 4 (333 thousand) and that for net migration on page 9 (+ 52 thousand) is 385 thousand. Why this difference of 3 thousand? Similar differences for earlier years have frequently led to questions.

Since it is realised that nowadays the registration of births and deaths can be safely assumed to cover approximately 100 per cent of these occurrences, the differences are thought to be due to changes in our estimates of net migration and the question why such estimates have not been revised has been posed. Is a corresponding discrepancy in the home population estimates to be assumed? Or, since it was thought that the home or 'actual' population was presumably basic to the calculation (with the modifications to arrive at the total and civilian populations superimposed at a later stage), is the difficulty in reconciling total population change, obtained by subtracting one estimate from its successor, with that shown by natural increase and net migration figures due to some revision of the armed forces element we are unable, on security grounds, to reveal?

The estimates procedure

These perfectly valid questions can best be answered by a detailed account of the annual national estimates procedure. However, we may as well point out at the start that no change whatever in the net migration estimate (or in the gross figures from which it is derived), since the postcensal amendments to the net figures for 1960 and 1961, or in the armed forces element in any of the three populations has in fact been involved in any of these intercensal figures to date,

though in theory a situation might arise in which they could be. Any discrepancies are in fact due to the difference between provisional figures of births and those finally emerging (and occasionally to slight amendments to the deaths figures or for rounding).

The Registrar General has a general obligation to estimate the population of England and Wales or any part thereof at intercensal dates when legally required to do so. He has also a specific obligation to certify to the Minister of Housing and Local Government annually his estimate of the population of every borough and county district of England and Wales simultaneously. These estimates are "for the calendar year" and must be certified in November of the year to which they relate. They use the mid-point of the year for this purpose, rather than its beginning or end, quite deliberately and after consultation with interested parties. Once made these estimates remain what they are, the best figures possible on the evidence available at the time they were necessarily made. Their use in determining Exchequer contributions to local authority income and their consequential use in a variety of other official calculations is not altered by the emergence of new evidence which would have affected them had it been available when the decision had to be made. This is built into the next round of estimates. Accordingly, the official national and local figures must always be understood (unless the contrary is made clear) to be estimates made at a particular time. One of the rare exceptions to this rule is when revisions are made to the national estimates after the final data from a full Census become available. The mid-1964 estimates were the first in which it was possible to use final 1961 Census data and revised national estimates for mid-1960 to mid-1963 inclusive have been published. This was possible because the fact that these revisions would have no effect on decisions using the earlier official figures was everywhere clearly understood and in fact had been agreed upon in advance in consultation with the appropriate bodies.

The obligation to provide certified figures in November and the need to control local estimates by national figures independently determined means that these national figures should be ready by early October. It is just possible to make the definitive estimate of the year's net migration by that time. The armed forces data for the exercise are available by then. But final figures of live births (i.e. occurrences) are not. Yet the estimates exercises call for natural change figures for the twelve months to end-June in the current year both for the country as a whole and for every local authority area down to county district level. Nationally all we have for births at the required date are (i) occurrences for the first three of the four quarters involved and (ii) a mixture of registrations and estimates for the fourth quarter. In compiling the mid-1965 estimates, for example, the best assumptions we were able to make in the autumn of 1965 were 866,010 births and 538,700 deaths, implying a natural increase of 327,310 over the year. But on page 12 it will be seen that we later discovered that the true natural increase had been 328,500, a difference of + 1,190. Apart from a trivial correction to the deaths figure, this difference is due to the substitution of correct for provisional births figures.

The annual national estimates procedure begins with the *total* **and not with the** *home* **population of the preceding year.** It was pointed out on page 30 of the 1963 Commentary that this has the advantage over starting with the simple *de facto* (i.e. *home*) population in not including deployment of our armed forces as migration. This is true; but it does not imply that there is something incorrect or slightly

improper in including deployment of our armed forces as migration, for movement of H.M. (and allied) Forces into and out of the country (or locality or region) is migration into or out of the *de facto* population of the area concerned. The advantage referred to is methodological. Apart from Allied Forces, we obtain at present the number of H.M. Forces stationed in England and Wales (by location) and the number stationed outside the United Kingdom at the beginning and end of the period under review. From the second it is possible to estimate the approximate number of H.M. Forces outside England and Wales who ought to be credited to the total population of this part of the United Kingdom (i.e. rather than to Scotland or Northern Ireland). But the difference in numbers of non-civilians stationed in an area at two different dates does **not** automatically yield the net number of non-civilians who have moved into or out of the area in the period. The present method enables this part of the *home* population migration figure to emerge automatically from the procedure.

The population change equation

Before explaining in some detail the method used in the national estimates (just as that used in assessing local populations was described in the 1964 Commentary, pages 13 to 16), with the various difficulties we have mentioned especially in mind, we should first be quite precise over what we are seeking to measure in each new estimate. Change in any population size can *only* be brought about by one or more of four means when population has its original reference to human (or other animate) beings or by one or both of the last two in the list below when the term refers to the number of inanimate objects in a particular space. The first two occur within the population itself as a result of the biological processes of reproduction and mortality and are (i) live births and (ii) deaths. Together these produce natural change (natural increase or decrease). The remaining two are (iii) movement of persons (or other units being studied) into the defined area (or group in the case of extra-territorial modifications of the original "number present in area" concept), i.e. inward migration and (iv) movement from within the area to elsewhere, i.e. outward migration. Together these will produce net migration (the balance of migration).

From population in area at a given date (P_t), to arrive at population one year later $(P_{(t+1)})$, we need only to add live births in area and net migration into area (which may be a negative quantity) to and subtract deaths in area from P_t. We must include all live births and deaths in area between t and $(t + 1)$, and not simply live births in area to women in P_t and deaths in area among P_t, i.e. live births in area to migrants after arrival and deaths in area among both migrants and children born to migrants are to be included.

So, when P'_t = the fertile female section of P_t and m'_t that of m_t ; $f_1(P'_t)$ = fertility function of P'_t; $f_2(P_t)$ = mortality function of P_t and m_t = net migration between t and $(t + 1)$,

$$P_{(t+1)} = P_t + m_t + f_1 (P'_t + m'_t) - f_2 (P_t + m_t)$$

with $\phi_t = P_t + m_t$,

$$P_{(t+1)} = \phi_t + f_1 (\phi'_t) - f_2 (\phi_t).$$

It is clear that population change (i.e. change in a number) can only properly be described as brought about by, or due to, numbers which relate to any one of the four terms - live births; deaths; inward migration; outward migration - or any combination or differentials of them. The net migration element ['ins' - 'outs'] in each estimate should take account not only of movement for more than one year (intended or actual) which for some purposes limits the definition of 'migrant' by international convention, but also any change in the balance of shorter-term migrants or visitors between this country and the rest of the world which has occurred since the previous estimate. A notional treatment of the date "at 30th June" to avoid purely seasonal changes in balance is, however, called for.

The starting point of each round of annual national population estimates is therefore the last estimate modified by any final births (and sometimes deaths) data we now have, but did not have at the time the estimate was necessarily made. In the 1965 round, we had to begin by adding 3 thousand persons to the mid-1964 estimate. This has been done in column (2) of the 1965 worksheets, part of one of which is reproduced below for explanatory purposes. Each year two such final worksheets are used, one for males and one for females, each by single years of age up to 84, with totals for five year age-groups, i.e. 0-4, ... 80-84, 85 and over.

Table C1. Estimated population, total, civilian and home as at 30.6.1965 - England and Wales **FEMALES**

(Thousands)

Age	Mid-1964 total population (estimates amended for final birth and death occurrences)	MOVEMENT mid-1964 to mid-1965 (ages at mid-1965)				Mid-1965 total population	H.M. Forces (England and Wales) everywhere	Mid-1965 civilian population	Armed Forces stationed in England and Wales	Mid-1965 home population
		Net age transfer	Net migration	Deaths	Net movement					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	BIRTHS - 420.66									
0-	412.51	8.15	-	6.31	1.84	414.4	-	414.4	-	414.4
1-	404.23	8.28	-0.05	1.12	7.11	411.3	-	411.3	-	411.3
2-	395.64	8.59	-0.12	0.39	8.08	403.7	-	403.7	-	403.7
3-	379.42	16.22	-0.40	0.26	15.56	395.0	-	395.0	-	395.0
4-	361.75	17.67	-0.35	0.18	17.14	378.9	-	378.9	-	378.9
0-4	**1,953.55**	**58.91**	**-0.92**	**8.26**	**49.73**	**2,003.3**	**-**	**2,003.3**		**2,003.3**
.....										
17	408.15	-24.34	1.26	0.15	-23.23	384.9	1.0	383.9	1.0	384.9
.....										
20	332.85	1.25	1.72	0.15	2.82	335.7	1.9	333.8	1.5	335.3
.....										
85+	**241.15**	**62.73**	**-**	**51.49**	**11.24**	**252.4**	**-**	**252.4**	**-**	**252.4**
All ages	**24,360.41**	**420.66**	**18.47**	**262.01**	**177.12**	**24,537.6**	**13.5**	**24,524.1**	**11.7**	**24,535.8**

Since there will be 420.66 thousand females aged under 1 year instead of the 412.51 thousand a year earlier, 8.15 thousand needs to be added in column (3) to the column (2) figure to achieve this. The 412.51 thousand females under 1 at mid-1964 would, if they survived, all be aged 1 by mid-1965, so that in column (2) we need to add 8.28 thousand to the 404.23 thousand aged 1 at mid-1964 and so on. Column (4) - net migration into and out of the total population - is here a simple finalisation of three separate worksheets of gross 'ins' and 'outs' and balance as described in detail on pages 30 to 35 of the 1963 Commentary.

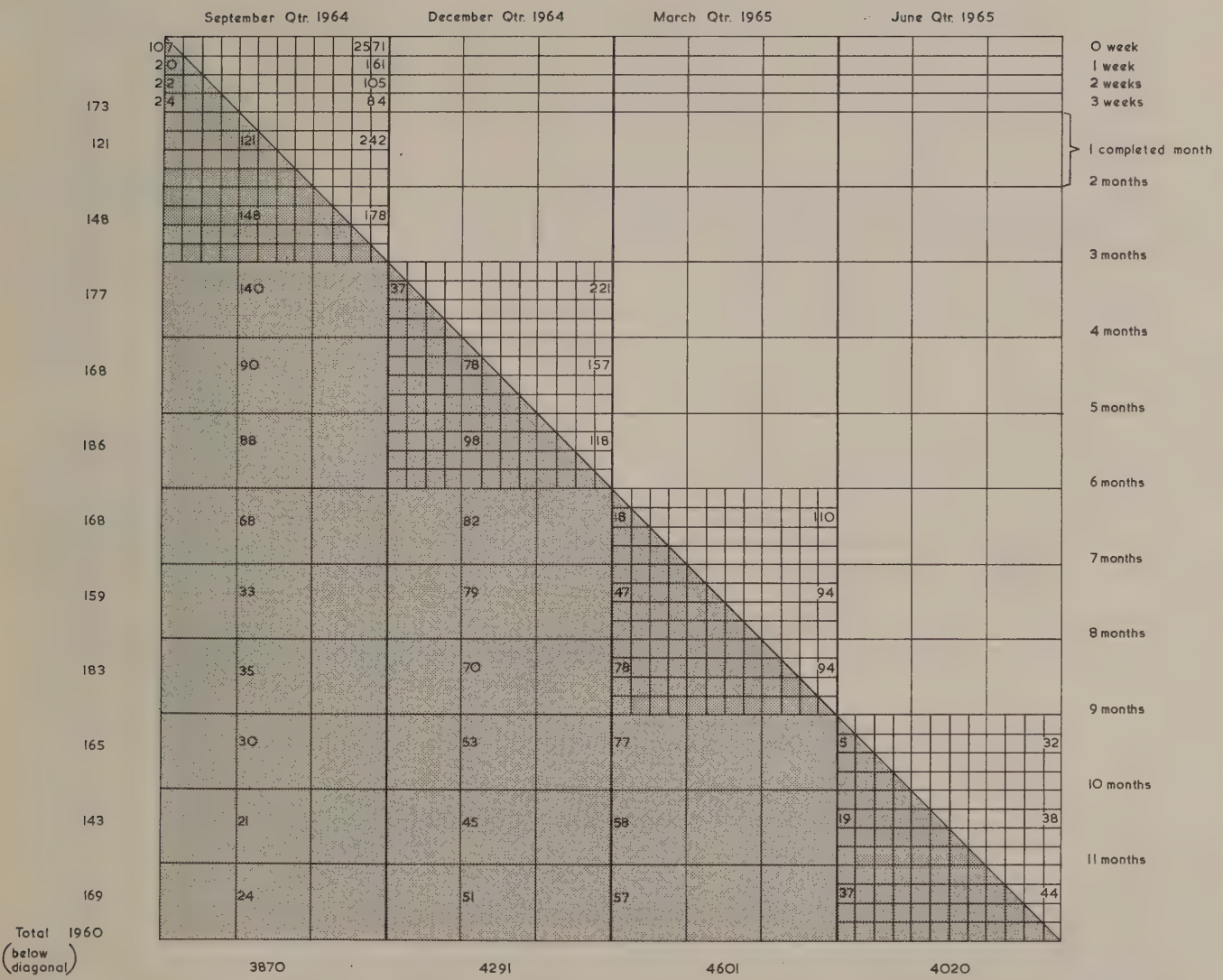
Column (5) records deaths during the year among the total population which otherwise would have been the sum of Columns (2), (3) and (4). Two points about the deaths figures merit attention. The first is that, strictly speaking, deaths during the year among the England and Wales share of H.M. Forces serving overseas should be included. In recent years these have been so few in number that, in view of the approximation noted below as necessary to arrive at the figure in Column (8), it has been deemed safe to leave them out of account.

The second point, however, concerns something of which account must be taken. Just as we needed (in Column (3)) to allow for the effect of the passage of time on the age at mid-1964 of our base population, so we must do likewise for the data on age at death. For those aged 1 year and over at death, this allowance may be made quite simply (for we only know the age at death in years). The statement below shows that transferring deaths at age x occurring during the first half of the year mid-1964 to mid-1965 to age x + 1 in Column (5) of the worksheet is as close an approximation as we can get on the data available.

For example, 202 girls aged 3 at death died during the year. The 85 of these who died in the first half of the year are transferred to age 4 at mid-1965. We are left with 117 non-transferable deaths aged 3, to which must be added the 148 girls who, though only 2 at date of death, died in the first half of the year and so are transferred to age 3 at mid-1965, giving the 265 deaths (rounded to 0.26 thousand) in Column (5) of the worksheet at age 3. Similarly the 85 referred to at the beginning of this paragraph are added to the 95 (185-90) non-transferable deaths aged 4 to give the 180 deaths aged 4 in Column (5) of the worksheet. And so on.

It is possible to be a little more sophisticated in allocating deaths at ages under 1 year over the twelve months from 30 June 1964. Data are available for deaths at each single week of life up to 1 month and by each of the remaining 11 months. It will be seen from the diagram following the statement below this paragraph that deaths in the first year are predominantly in the first three months of life. Bisecting the diagram diagonally, it will be seen that only 1,960 of the 16,782 deaths plotted are on the shaded left of the diagonal, i.e. 12 per cent. This proportion is used for the age transfer of deaths for boys and girls alike, so that the deaths of 860 of the girls under 1 year at decease are transferred to age 1 on the worksheet, the remaining 6,308 deaths being recorded at age 0- on the worksheet.

Diagram 1



Diagrammatic estimation of that percentage of infants who died aged under 1 year, who would have attained their 1st. birthday by the estimate day.

Table C2. Approximation of deaths by age as at 30th June 1965

Age last birthday	Deaths 2nd half 1964	Deaths 1st half 1965	Deaths Mid-1964 to mid-1965	Deaths transferred to next age	Net age transfer	Deaths by estimated age as at June 1965
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0	3,490	3,678	7,168	860*	- 860	6,308
1	238	259	497	238	+ 622	1,119
2	148	154	302	148	+ 90	392
3	85	117	202	85	+ 63	265
4	90	95	185	90	- 5	180
0-4						8,264
16	*79*	*79*	*158*	*79*		
17	76	64	140	76	+ 3	143
19	*85*	*73*	*158*	*85*		
20	90	69	159	90	- 5	154
84	*4,076*	*4,880*	*8,956*	*4,076*		
85+	20,829	26,582	47,411	-	+4,076	51,487

* The figure of 860 is calculated by taking 12 per cent of the total deaths. The method by which the 12 per cent is obtained is illustrated by Diagram 1.

The sum of Columns (3), (4) and (5) is entered as Column (6) on the worksheet. Columns (6) plus (2) will give the *total* population at mid-1965 which is then rounded to one decimal place, e.g. 414.35 thousand girls under 1 year of age becomes 414.4 thousand.

Column (8) of the worksheet is used for the entry, by sex and by age at mid-1965, of the armed forces element in the *total* population of England and Wales, i.e. the England and Wales share of the United Kingdom Forces wherever serving. While we have detailed evidence, by precise location, both for H.M. Forces *tout simple* and Allied Forces actually stationed in England and Wales (to be used in Column (10) to arrive at the *home* population from the *civilian*), for Column (8) we have to rely on data which have regard to the fact that United Kingdom Forces serving outside England and Wales, Scotland and Northern Ireland respectively are not an amalgam of three separate navies, armies and air forces but a single Navy, Army and Air Force for the United Kingdom of Great Britain and Northern Ireland. Yet the preparation of three separate estimates of *total* population by the three Registrars General poses a problem of allocation. Various criteria which might suggest themselves as theoretically (if not very practicably) possible for soldiers serving outside each of the three respective fields of responsibility will not hold for sailors and airmen. In fact we use an agreed compromise, admittedly not likely to be precisely accurate in reflecting change between different points of time in numbers, sex and ages.

The subtraction of the entire non-civilian content of the *total* population (i.e. H.M. Forces stationed in England and Wales and H.M. Forces (England and Wales share) elsewhere) gives the *civilian* population and the addition of the precisely known number of non-civilians stationed in England and Wales (H.M. Forces and Allied Forces) yields the *home* population, i.e. the number actually present in the country, the equivalent of the population enumerated at each full Census.

It was estimated that at mid-1965 the *home* population of England and Wales was 47,763 thousand persons, the *total* population was 47,885 thousand and the *civilian* population was 47,513 thousand.

Comparison with earlier recent years is shown in Table C3 below:-

Table C3. Estimated population mid-1951, mid-1956 and mid-1960 to mid-1965, England and Wales

(Figures in thousands)

Mid-year	Total			Home			Civilian		
	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
1951	44,007	21,233	22,774	43,815	21,044	22,771	43,284	20,530	22,754
1956	44,821	21,669	23,152	44,667	21,517	23,150	44,151	21,013	23,138
1960	45,882	22,203	23,679	45,775	22,097	23,678	45,426	21,760	23,666
1961	46,308	22,455	23,853	46,205	22,353	23,852	45,891	22,051	23,840
1962	46,807	22,756	24,051	46,709	22,660	24,049	46,418	22,382	24,036
1963	47,129	22,934	24,195	47,028	22,834	24,194	46,755	22,574	24,181
1964	47,511	23,152	24,359	47,401	23,044	24,357	47,140	22,794	24,346
1965	47,885	23,347	24,538	47,763	23,227	24,536	47,513	22,989	24,524

Change in home population

The addition of figures for a further year to the statement on page 3 of the 1964 Commentary does not change the comment made a year ago.

Between mid-year home population estimates	*Increase in thousands*	*Increase as percentage of base estimate*
1961 - 1962	504	1.09
1962 - 1963	319	0.68
1963 - 1964	373	0.79
1964 - 1965	362	0.76

To meet the needs of those experiencing the difficulties outlined at the beginning of this chapter, however, it has been decided to present changes in the *home* population in recent years in a form designed specifically to highlight the points made. Column (2) of Table C4 gives the figure of population change when one annual estimate of home population made in the year to which it relates is subtracted from its predecessor, while column (9) gives the figure for the period when final birth occurrences are substituted for the figures necessarily used in the autumn of the year to which the estimate relates. Column (3) shows the adjustment made for the previous year's corrected figure ± any further adjustment necessary to bring this starting adjustment **plus** provisional natural change figures into line with final natural change figures.

Table C4. Analysis of home population differences, mid-year to mid-year 1960 to 1965, England and Wales

(Figures in thousands)

Year ending 30 June	Difference between the two relevant published estimates	Adjustments for final births data (or exceptionally for deaths, or rounding)	Change in Armed Forces stationed in area	Net gain to civilian sector of home population by demobilisation	Change in the Home Population			
					due to net migration		due to natural increase	from all causes
					caused by deployment of Armed Forces	other		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1961	430	- 2	- 36	39	3	181	244	428
1962	504	nil	- 24	28	4	225	275	504
1963	319	nil	- 17	14.5	- 2.5	50	271.5	319
1964	373	+ 4	- 11	3	- 8	52	333	377
1965	362	- 3	- 12	-	- 12	43	328	359
Five years to 1965	**1,988**	**- 1**	**-100**	**84.5**	**- 15.5**	**551**	**1,451.5**	**1,987**

It will be seen that the figures in column (7) differ from the original estimates of net migration made in the year to which they relate only in the case of 1960-61. This figure was fully commented upon (together with that for 1959-60) on pages 5-8 of the 1964 Commentary and incorporates the agreed best method of distributing the small excess of persons enumerated in England and Wales on 23/24 April, 1961, over the expected figure. As the estimates for 1961-62 and 1962-63 as revised in 1964, there is a nil entry in Column (3) for these years.

Table C4 is not merely a presentation of change and the nature of change in the home population: that is shown in columns (6) to (9) only. Columns (4) and (5) have been added to demonstrate that "change in armed forces stationed in area" is not itself an element of population change by net migration. The reason for this is simply that the number of armed forces stationed in an area can and does change simply because some of the people who were in the armed forces become civilians during the year and *vice versa*. The number in the armed forces stationed in the area has thereby been reduced (or increased) but the number of people living in the area will not have changed at all. Table C4 shows that between 1st July 1960 and 30th June 1965 the number of armed forces stationed in England and Wales fell by 100 thousand. But 84.5 thousand of this was simply due to excess of demobilisation over recruitment. The home population of England and Wales only fell by 15.5 thousand because of deployment of H.M. and Allied Forces between this country and elsewhere. This point has not been stressed *in vacuo*, but to remove a misunderstanding which has recently become apparent, especially in regard to change in regional and other sub-national populations.

To estimate the effect on regional and local populations of deployment of the armed forces, since we only know precisely the change in armed forces stationed in area, it is necessary to distribute the national figures in column (5) over lesser areas on an agreed basis. Nationally, however, we can arrive at column (6) without recourse to the use of one figure which is partly net migration and partly not an element in population change [column (4)] and another which is not population change at all [column (5)]. We can complete column (6) directly. For, at risk of tautology, it may be pointed out that column (6) is the difference between the change in the *total* and that in the *de facto* populations in the relevant period. Or we can put in column (6) the sum of two genuine elements of net migration which are available to us, viz. the net inflow into (or outflow from) England and Wales of (a) allied forces and (b) the England and Wales share of H.M. Forces outside this country. This may be illustrated for two recent years as follows:-

Net migration (in thousands)		*1961-62*		*1963-64*
Into total population		+ 225.0		+ 52.0
Net inflow into (outflow from) England and Wales of				
(a) Allied forces	- 0.3		- 2.4	
		+ 4.3		- 8.4
(b) E & W share of UK Forces outside this country	+ 4.6		- 6.0	
Into home population		+ 229.3		+ 43.6

Table C5. Natural Increase of the home population of England and Wales

Calendar years	Thousands per year			Per cent natural increase
	Births	Deaths	Natural increase	
1911 - 1930	761	496	265	0.7
1931 - 1950	666	499	167	0.4
1951 - 1955	675	514	161	0.4
1956 - 1960	740	523	217	0.5
Mid-year to mid-year				
1961 - 1962	831	556	275	0.6
1962 - 1963	848	577	271	0.6
1963 - 1964	863	530	333	0.7
1964 - 1965	867	539	328	0.7

These figures show that it has been the changes in the numbers of births that have lain behind the varying rates of population change this century. The underlying causes have been considered in census reports on fertility and in the Birth chapters of previous numbers of this commentary. Here it is only necessary to draw attention to the fact that it was the decline in births from about 1910 to about 1933* and their recovery from then until mid-1964 which were the dominant influence on population change. As has been frequently pointed out, deaths fluctuate independently of births and in response to conditions which cannot be pre-determined. Hence the ups and downs of natural increase figures from one year to the next are in themselves of little significance. What is significant is the absolute and relative size of this increase over recent years.

Migration

A discussion of the only cause of change in a population other than natural increase - gross and net migration of persons into and out of it - will be found in the Migration chapter of the 1963 Commentary, the relevant sections of the Population chapter in that for 1964 and earlier volumes and in the separate Migration chapter in this volume (pages 30 to 38).

* This trend persisted in spite of temporary exceptions after the 1914 - 18 War.

Distribution by sex, age and marital condition

Sex ratios

In the 1964 Commentary we discussed at length the change in the proportion of males to females in the population as a whole and at various ages between the 1911 Census and mid-1964. Here it is only necessary to confirm that the earliest age at which there were as many females as males (which had risen from age 10 in 1911 to 43 at mid-1964) remained 43 at mid-1965. In the population as a whole, the proportion of the sexes (which had been 93 males for every 100 females at mid-1951 and 94 at mid-1961) was 95 at mid-1965. At mid-1963 there were, however, only 609 males for every thousand females aged 65 and over whereas the proportion had been 757 in 1911. By mid-1965 it was only 607. As recently as the 1951 Census there were 620 males to every thousand females aged 75 and over; but by mid-1965 there were more than twice as many females as males in this age-group.

Age structure

On page 11 of the 1964 Commentary, Table C6 drew attention to changes since 1911 in the proportions of the total population aged under 15 and aged 65 and over and of both these age-groups combined compared with the proportion aged 15-64. Table C6 brings these proportions up-to-date and again adds those in the population currently projected for 2001.

Table C6. Proportion per 1,000 of the total population aged under 15, 15-64 and 65 and over in 1911, 1931, 1951 and 1965, England and Wales

Age-group	1911 (Census)	1931 (Census)	1951 (Census)	1965 (estimate)	2001 (Projection)
All ages	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**
Under 15	306	238	221	228	281
65 and over	52	74	110	122	114
Under 15 and 65 and over	358	312	331	349	395
15-64	642	688	669	651	605

In the 1964 Commentary stress was laid on the significance of the large cohort of persons born between 1871 and 1911 on the age structure of the population at the dates considered. This cohort (the largest for any forty-year period of our history and receiving its record increment in the decade prior to 1911) had produced a 1911 population which was exceptionally youthful. With the decline in mortality at younger ages, the survivors of this cohort (despite the impact of two world wars and continuing emigration) have moved forward in age and, reinforced by immigrants during the period who have remained here, account for the sector of the population which in 1965 were aged 54 and over. Simultaneously the falling number of births producing the next forty-year cohort meant that the younger age-groups were a declining proportion of the whole population and by 1951 these two influences had produced a population much older than in 1911. The increase in the relative size of the over 65 age-group has been much slower since 1951 than it was

between 1911 and 1951. But since 1951 the under 15 age-group has reversed the direction of movement of its relative size and has comprised a growing share of the whole population and, if the assumptions behind the projection are realised, will continue to do so. The effect of this rise, fall and recovery in births during the twentieth century on the proportion of the population aged 15-64 is noteworthy. From 64.2 per cent in 1911, it had risen by 1931 to 68.8 per cent. But by 1965, only 65.1 per cent of the population was in this category. Whether or not this proportion will have fallen to 60.5 per cent by 2001 depends on several assumptions, the most important of which is that concerning births during the rest of this century.

Marital status

Here also there has been substantial recent comment on the division of the population by sex and by age-groups beginning with 15-24 into married and other and Table C7 in the 1964 Commentary is brought up-to-date below. While the married proportion of all males aged 35-44 has remained constant at 86.3 per cent for the last three years, the proportion aged 45-54 has fallen very slightly and the slight rise by mid-1964 from the previous year for those aged 55-64 has only been maintained. The married proportion in the remaining age-groups for males and in all age-groups for females has continued to rise.

Table C7. Proportion married per 1,000 in each age-group 1931, 1951, 1963, 1964 and 1965, England and Wales

Age-group	Males					Females				
	1931 (census)	1951 (census)	1963 (estimate)	1964 (estimate)	1965 (estimate)	1931 (census)	1951 (census)	1963 (estimate)	1964 (estimate)	1965 (estimate)
15–24	70	125	150	151	154	140	272	302	303	307
25–34	640	720	765	768	773	658	798	860	862	864
35–44	855	862	863	863	863	752	820	874	877	882
45–54	847	877	879	879	878	720	759	809	813	818
55–64	795	850	860	861	861	619	624	668	673	678
65 and over	619	664	709	711	715	341	352	341	342	343

Revision of marital condition estimates

Since the 1964 Commentary was prepared, however, some interesting new tables analysing the *total* population by sex, age and marital condition since mid-1957 have been prepared, using the final 1961 Census data as control. These differ slightly from the figures published in Part II (Population tables) of the 1964 *Statistical Review* in respect of married and widowed females in the age-groups 25-44 for the years 1961-64 inclusive and the revised tables for these years and figures for mid-1957 and mid-1965 are given below.

Table C8(A). Estimated total population by sex, age and marital condition, as at 30th June 1957) England and Wales

(Figures in thousands)

MALES					Age-Group	FEMALES				
Total	Single	Married	Widowed	Divorced		Total	Single	Married	Widowed	Divorced
21,782	**9,409**	**11,576**	**687**	**110**	**All ages**	**23,261**	**9,045**	**11,614**	**2,427**	**175**
5,253	5,253	–	–	–	0–	5,008	5,008	–	–	–
1,427	1,414	13	–	–	15–	1,389	1,306	83	–	–
1,428	1,034	393	–	1	20–	1,387	624	759	1	3
1,485	463	1,014	1	7	25–	1,466	254	1,200	2	10
1,572	281	1,295	4	12	30–	1,573	182	1,366	7	18
1,577	202	1,353	6	16	35–	1,615	176	1,391	22	26
1,559	161	1,366	13	19	40–	1,612	166	1,370	48	28
1,625	142	1,443	22	18	45–	1,666	209	1,349	80	28
1,525	140	1,332	38	15	50–	1,607	220	1,223	140	24
1,271	103	1,107	51	10	55–	1,457	211	1,009	220	17
990	72	841	71	6	60–	1,285	190	772	313	10
797	60	636	98	3	65–	1,107	171	530	400	6
599	49	429	119	2	70–	902	138	328	433	3
674	55	354	264	1	75 and over	1,187	190	234	761	2

Table C8(B). Estimated total population by sex, age and marital condition, as at 30th June 1961) England and Wales

(Figures in thousands)

MALES					Age-Group	FEMALES				
Total	Single	Married	Widowed	Divorced		Total	Single	Married	Widowed	Divorced
22,455.0	**9,825.3**	**11,851.6**	**662.4**	**115.7**	**All ages**	**23,853.0**	**9,267.7**	**11,872.8**	**2,526.3**	**186.2**
5,436.0	5,436.0	–	–	–	0–	5,169.1	5,169.1	–	–	–
1,656.8	1,638.4	18.4	–	–	15–	1,603.9	1,496.6	107.3	–	–
1,487.4	1,027.9	458.5	0.2	0.8	20–	1,449.6	611.9	834.0	1.3	2.4
1,465.4	432.0	1,027.3	1.1	5.0	25–	1,405.9	220.3	1,174.0	3.0	8.6
1,508.8	262.4	1,233.2	2.7	10.5	30–	1,477.1	160.2	1,297.8	4.3	14.8
1,612.5	212.6	1,377.9	6.3	15.7	35–	1,610.3	156.2	1,414.3	16.2	23.6
1,527.7	164.6	1,334.8	10.8	17.5	40–	1,556.2	148.2	1,338.1	42.1	27.8
1,573.1	150.1	1,384.4	19.5	19.1	45–	1,643.4	172.2	1,358.8	81.9	30.5
1,560.0	137.2	1,370.7	34.1	18.0	50–	1,639.8	198.4	1,276.0	137.7	27.7
1,414.6	119.9	1,229.5	51.8	13.4	55–	1,537.3	211.2	1,087.0	217.7	21.4
1,105.8	86.5	938.4	72.8	8.1	60–	1,355.4	193.8	826.5	320.7	14.4
819.9	59.3	665.2	91.3	4.1	65–	1,161.7	176.3	572.1	405.0	8.3
600.2	44.8	440.8	112.6	2.0	70–	943.5	145.8	345.1	448.4	4.2
389.5	30.9	242.7	114.9	1.0	75–	680.3	105.7	168.3	404.6	1.7
205.1	15.9	99.1	89.7	0.4	80–	402.1	64.5	59.4	277.6	0.6
92.2	6.8	30.7	54.6	0.1	85 and over	217.4	37.3	14.1	165.8	0.2

Table C8(C). Estimated total population by sex, age and marital condition, as at 30th June 1962) England and Wales

(Figures in thousands)

MALES					Age-Group	FEMALES				
Total	Single	Married	Widowed	Divorced		Total	Single	Married	Widowed	Divorced
22,756.4	**9,987.0**	**11,991.6**	**657.8**	**120.0**	**All ages**	**24,051.1**	**9,346.4**	**11,966.7**	**2,544.7**	**193.3**
5,439.8	5,439.8	–	–	–	0–	5,167.8	5,167.8	–	–	–
1,797.5	1,776.5	21.0	–	–	15–	1,727.9	1,607.9	119.9	0.1	–
1,516.2	1,033.5	481.8	0.2	0.7	20–	1,470.6	610.8	856.0	1.1	2.7
1,496.2	436.0	1,053.5	1.2	5.5	25–	1,419.7	219.8	1,186.7	3.4	9.8
1,528.7	262.9	1,250.4	2.5	10.9	30–	1,472.0	155.0	1,296.8	4.8	15.4
1,586.8	212.0	1,353.7	5.8	15.3	35–	1,569.7	149.9	1,383.1	14.3	22.4
1,598.5	173.7	1,395.5	10.9	18.4	40–	1,606.2	147.1	1,389.2	40.8	29.1
1,538.4	147.1	1,353.4	18.8	19.1	45–	1,601.0	162.9	1,328.5	79.4	30.2
1,558.5	136.4	1,369.9	33.6	18.6	50–	1,640.2	189.8	1,284.5	137.2	28.7
1,429.7	120.5	1,243.2	51.7	14.3	55–	1,552.2	208.5	1,103.5	217.4	22.8
1,148.9	90.7	974.9	74.3	9.0	60–	1,372.9	193.7	842.2	321.4	15.6
827.9	59.8	672.9	90.7	4.5	65–	1,176.5	176.3	581.8	409.2	9.2
604.3	44.2	446.9	111.1	2.1	70–	952.4	147.0	350.3	450.4	4.7
388.7	30.7	243.6	113.3	1.1	75–	690.6	107.1	170.2	411.4	1.9
204.1	16.1	99.5	88.1	0.4	80–	406.5	64.7	59.5	281.7	0.6
94.2	7.1	31.4	55.6	0.1	85 and over	224.9	38.1	14.5	172.1	0.2

Table C8(D). Estimated total population by sex, age and marital condition, as at 30th June 1963) England and Wales

(Figures in thousands)

MALES					Age-Group	FEMALES				
Total	Single	Married	Widowed	Divorced		Total	Single	Married	Widowed	Divorced
22,933.6	**10,099.7**	**12,055.5**	**652.6**	**125.8**	**All ages**	**24,195.4**	**9,407.9**	**12,019.7**	**2,566.5**	**201.3**
5,461.5	5,461.5	–	–	–	0–	5,187.9	5,187.9	–	–	–
1,872.6	1,850.4	22.2	–	–	15–	1,792.1	1,669.1	122.9	0.1	–
1,543.6	1,053.7	489.1	0.2	0.6	20–	1,501.6	627.3	870.4	1.2	2.7
1,513.0	433.0	1,072.4	1.2	6.4	25–	1,439.8	219.0	1,206.0	3.6	11.2
1,528.4	260.0	1,254.2	2.4	11.8	30–	1,457.6	148.6	1,287.5	5.2	16.3
1,564.6	208.6	1,335.2	5.3	15.5	35–	1,535.7	142.3	1,358.4	13.1	21.9
1,667.4	182.8	1,453.4	11.4	19.8	40–	1,667.2	148.0	1,448.0	40.5	30.7
1,468.9	140.8	1,291.5	17.9	18.7	45–	1,522.7	150.8	1,267.2	75.3	29.4
1,552.5	135.8	1,364.5	33.2	19.0	50–	1,638.6	181.5	1,290.5	136.7	29.9
1,443.0	120.7	1,255.1	51.7	15.5	55–	1,564.6	204.6	1,117.7	218.1	24.2
1,192.4	94.9	1,011.7	76.2	9.6	60–	1,395.7	193.7	860.1	325.0	16.9
835.4	60.2	679.6	90.8	4.8	65–	1,189.4	175.8	590.9	412.7	10.0
607.4	43.5	451.3	110.2	2.4	70–	961.7	147.9	354.4	454.2	5.2
387.1	30.1	244.4	111.5	1.1	75–	700.2	108.2	172.2	417.7	2.1
201.5	16.2	99.4	85.4	0.5	80–	411.0	65.0	59.1	286.3	0.6
94.3	7.5	31.5	55.2	0.1	85 and over	229.6	38.2	14.4	176.8	0.2

Table C8(E). Estimated total population by sex, age and marital condition, as at 30th June 1964 — England and Wales

(Figures in thousands)

MALES					Age-Group	FEMALES				
Total	Single	Married	Widowed	Divorced		Total	Single	Married	Widowed	Divorced
23,151.9	**10,216.3**	**12,152.7**	**651.0**	**131.9**	**All ages**	**24,359.1**	**9,467.4**	**12,093.0**	**2,589.2**	**209.5**
5,516.0	5,516.0	–	–	–	0–	5,245.3	5,245.3	–	–	–
1,907.0	1,882.5	24.5	–	–	15–	1,813.4	1,686.9	126.4	0.1	–
1,589.5	1,085.0	503.6	0.2	0.7	20–	1,538.2	644.3	889.9	1.2	2.8
1,537.2	431.0	1,098.0	1.1	7.1	25–	1,462.8	218.4	1,228.3	3.8	12.5
1,524.1	255.4	1,253.6	2.3	12.8	30–	1,433.5	140.7	1,270.1	5.5	17.2
1,550.4	205.8	1,323.8	4.9	15.9	35–	1,507.2	135.0	1,338.2	12.1	21.9
1,711.2	188.2	1,490.8	11.5	20.7	40–	1,705.9	147.7	1,487.7	39.0	31.5
1,418.0	136.4	1,246.2	16.8	18.6	45–	1,459.2	139.3	1,220.6	70.6	28.7
1,553.5	135.9	1,365.4	32.5	19.7	50–	1,642.3	174.6	1,300.8	135.6	31.3
1,455.9	121.3	1,287.0	51.2	16.4	55–	1,573.9	198.6	1,132.7	217.1	25.5
1,231.4	98.6	1,046.0	76.4	10.4	60–	1,419.3	194.6	880.8	325.8	18.1
852.6	61.7	693.4	92.2	5.3	65–	1,206.7	175.4	604.9	415.4	11.0
613.7	43.4	458.8	108.9	2.6	70–	975.1	149.7	361.5	458.2	5.7
390.0	30.1	247.7	111.1	1.1	75–	714.1	110.5	175.9	425.3	2.4
203.9	16.8	101.4	85.2	0.5	80–	421.0	66.6	60.3	293.4	0.7
97.5	8.2	32.5	56.7	0.1	85 and over	241.2	39.8	14.9	186.3	0.2

Table C8(F). Estimated total population by sex, age and marital condition, as at 30th June 1965 — England and Wales

(Figures in thousands)

MALES					Age-Group	FEMALES				
Total	Single	Married	Widowed	Divorced		Total	Single	Married	Widowed	Divorced
23,346.7	**10,320.2**	**12,239.3**	**648.5**	**138.7**	**All ages**	**24,537.6**	**9,525.5**	**12,175.3**	**2,616.1**	**220.7**
5,588.1	5,588.1	–	–	–	0–	5,316.5	5,316.5	–	–	–
1,919.6	1,893.0	26.6	–	–	15–	1,821.8	1,692.2	129.5	0.1	–
1,639.6	1,118.9	519.8	0.2	0.7	20–	1,583.2	661.9	916.5	1.4	3.4
1,548.0	421.3	1,117.9	0.9	7.9	25–	1,479.0	215.0	1,245.9	3.8	14.3
1,520.0	249.3	1,254.7	2.2	13.8	30–	1,424.8	135.7	1,264.0	6.2	18.9
1,538.2	201.3	1,315.6	4.5	16.8	35–	1,487.5	127.4	1,325.0	12.1	23.0
1,673.7	185.3	1,456.6	10.9	20.9	40–	1,660.8	140.7	1,452.9	36.0	31.2
1,447.3	139.9	1,271.2	16.7	19.5	45–	1,476.9	133.9	1,245.1	68.4	29.5
1,550.7	136.3	1,362.5	31.6	20.3	50–	1,639.3	167.7	1,304.0	135.2	32.4
1,464.5	121.7	1,274.7	51.1	17.0	55–	1,581.9	191.6	1,146.4	217.2	26.7
1,254.3	100.9	1,065.8	76.2	11.4	60–	1,440.0	195.4	901.4	323.8	19.4
885.8	64.9	720.8	94.3	5.8	65–	1,226.5	175.3	617.8	421.4	12.0
619.1	43.4	465.2	107.8	2.7	70–	990.6	150.6	369.5	464.2	6.3
392.3	29.8	250.8	110.5	1.2	75–	724.6	112.3	179.7	429.9	2.7
205.9	17.2	103.9	84.3	0.5	80–	431.8	67.9	62.2	300.9	0.8
99.6	8.9	33.2	57.3	0.2	85 and over	252.4	41.4	15.4	195.5	0.1

The category "divorced" in these tables relates solely to persons who have not re-married at the date to which the tables refer (and to the very small number of persons whose apparent marriage has been formally annulled and who have not married since the decree of nullity). At mid-1957 there were 780 divorced men under 25 years of age who had been married but at that date had not contracted another marriage and 680 at mid-1965, with figures ranging from 600 to 800 in the years between. But women under 25 whose marriage had ended in divorce and who had not remarried were 2,590 at mid-1957 and 3,400 at mid-1965, with figures ranging from 1,900 to 2,860 in the years between. At the other end of the life span, change in the proportion of those to each marital status between 1957 and 1965 were as follows:-

	Males 70 and over *Percentage*				Females 70 and over *Percentage*			
	Single	married	widowed	divorced	Single	married	widowed	divorced
mid-1957	8	62	30	-	16	27	57	-
mid-1965	8	65	27	-	16	26	58	-

Regional populations

Revised Standard Regions

Revised regional population estimates, taking full account of the data from the 1961 Census, have been made in terms of the new standard regions (1). These differ from those used in recent years in the following ways:-

Revised standard region	*Definition in terms of old regions* (2)
Yorkshire and Humberside	East and West Ridings plus Lincoln - Parts of Lindsey (administrative county with Grimsby county borough, but excluding Lincoln county borough).
East Midland	North Midlands region less both Lincoln - Parts of Lindsey (administrative county with Grimsby county borough) and the Soke of Peterborough (3).
East Anglia	The Soke of Peterborough (3) plus the following counties in the old Eastern Region: Huntingdonshire (3), Norfolk, East and West Suffolk, Cambridgeshire and Isle of Ely, and their associated county boroughs.
South East	The Southern, London and South Eastern and Eastern regions less Huntingdonshire (3), Norfolk, East and West Suffolk, Cambridgeshire and Isle of Ely, and their associated county boroughs.

(1) *The Registrar General's Quarterly Return for England and Wales* Nos. 469 and 472, for the first and fourth quarters of 1966.
(2) Detailed definitions of all regions will be found on page xvii of this volume.
(3) Now part of Huntingdon and Peterborough administrative county.

As a result of the above changes, revised standard regions correspond to the areas for which Regional Economic Planning Councils have been established except that Poole municipal borough in Dorset, which is within the area of the South West Regional Economic Planning Council, is in the South East revised standard region.

Within the new South East region, the Greater London Council Area replaces the old Greater London conurbation. It differs from the old conurbation in the following ways:-

(a) It includes Romford M.B. and Hornchurch U.D. (previously in Essex A.C.).

(b) It excludes Potters Bar U.D., Staines U.D., and Sunbury-on-Thames U.D. (previously in Middlesex A.C. - Potters Bar is now in Hertfordshire, Staines and Sunbury-on-Thames are now in Surrey); Chigwell U.D. [4], and Waltham Holy Cross U.D. (in Essex); Bushey U.D., Cheshunt U.D., and Elstree R.D. (in Hertfordshire); and Banstead U.D., Epsom and Ewell M.B., and Esher U.D. (in Surrey).

In addition, a new sub-region has been defined, round the GLC Area, known as the Outer Metropolitan Area. This has its boundary about 40 miles from Charing Cross and, together with Greater London, it makes up the Metropolitan region as defined for *The South East Study* [5].

Regional population change

Precisely the same considerations which have earlier been discussed in relation to change in the *home* (*de facto*) population of England and Wales apply in the case of regional *home* populations, even though the *de facto* basis is regionally modified by the concept of "usual residence" instead of "present in area". This was described in detail on page vii of the Usual Residence volume of the 1961 Census tables. In addition, regional estimates need to have regard to net migration between each standard region and the rest of England and Wales. The sum of such inter-regional migration figures for the whole of the country is, of course, zero.

Once we have adjusted [6] the difference between two annual estimates for each region in order to arrive at the correct population change figure, we can arrive quite simply at the breakdown of that region's change into its two main component parts. We know precisely the natural increase component: the balance is the net migration figure. It is when we attempt to assess such elements as that part of net migration due to movement of the armed forces, that part due to civilian migration into and out of the country and that part due to civilian inter-regional migration, that the difficulties begin. We are obliged to proceed on the basis of assumptions.

Here we merely set out the assumptions that have been made in distributing post-Census regional migration into the three elements we have mentioned.

---

(4) Except for the area within the GLC's Hainault Estate.
(5) H.M.S.O. for the Ministry of Housing and Local Government, 1964. For the exact make-up of the Outer Metropolitan Area see page xvii of this volume.
(6) For better births figures than those available when the estimate was made, occasionally for revised deaths figures and exceptionally because of the recertification of the estimated population of a local authority area.

Armed Forces

We know, of course, the precise change in the number of H.M. Forces and allied forces stationed in each region. To arrive at the net migration content of this change we need to estimate the regional share of the net gain by transfer from the non-civilian to the civilian sector of the home population through the rundown of the England and Wales share of H.M. Forces as a whole. This rundown in the British armed forces has been assumed to affect each region in proportion to its home population in the relevant sex/age groups. Change in armed forces stationed in the region **plus** the region's share of the net gain to the national civilian population by demobilisation provides that element of regional net migration due to deployment of the armed forces.

Inter-country migration

Here we have to estimate net balance between the number of emigrants from this country who came from each region and the number of immigrants to this country who settled there. This is highly problematical. We have assumed that the estimated net inflow into England and Wales of aliens, holders of Commonwealth country passports and residents of Scotland and Northern Ireland should be divided between regions on the basis of regional changes in persons born outside England and Wales between 1951 and 1961. These were estimated on the basis of census data, after making due allowance for deaths of immigrants present in 1951 in the areas concerned. The net number of UK passport holders assumed to leave each region for other countries (i.e. emigrants minus returning former emigrants) was obtained by apportioning the estimated total for England and Wales according to the number of persons who left the region concerned for other regions in England and Wales in the year preceding the 1961 Census. This sub-division is of necessity even more tentative than the other data in the table, and it should be regarded as indicative of orders of magnitude only. With official deployment of the armed forces treated separately, this inter-country migration (and the inter-regional migration mentioned below) is often described as 'civilian', though it may include the movement of individual non-civilians.

Inter-regional migration

We have already referred to the fact that population change *minus* natural increase for each region gives its total net migration. If we are breaking down this figure into three elements (armed forces; international; inter-regional), the last will be net migration as a whole *minus* the other two elements. Analyses of regional population change on this basis from mid-1961 to mid-1965 were published as Appendix E in the *Registrar General's Quarterly Return* for the December Quarter of 1966.

The comments on each region set out below, however, use a breakdown of net migration into *two* elements for the four years beginning with mid-1962. One element is the net movement of persons between the region concerned and the rest of England and Wales: the other element is the region's estimated share of the net movement between this country and the rest of the world. The first element includes inter-regional deployment of the armed forces: the "other" element

relates to civilians only. A table analysing the difference between the mid-1965 and mid-1966 home population estimates of regions and conurbations, with totals for England and Wales, is published as Appendix D in the *Quarterly Return* referred to in the previous paragraph. It uses civilian net migration only in the last two columns. The "special factors" in the third column include deployment of the armed forces and changes in the births data, etc. made between the dates of the mid-1965 and mid-1966 estimates.

North Region

The home population of the region has been subject to the following changes:

Thousand persons

	Natural increase			*Net migration*			
	Births	*Deaths*	*Net*	*Inter-regional (7)*	*Other*	*Net*	*Overall change*
1962-3	+ 60.9	- 39.7	+ 21.2	- 6.5	- 2.5	- 9.0	+ 12.2
1963-4	+ 59.6	- 36.8	+ 22.8	- 7.5	- 4.2	- 11.7	+ 11.1
1964-5	+ 60.0	- 38.8	+ 21.2	- 9.6	- 3.9	- 12.5	+ 8.7
1965-6	+ 58.0	- 40.3	+ 17.7	- 4.9	- 4.9	- 9.8	+ 7.9

The effect of migration, therefore, has been to offset about half of the region's natural increase.

The number of births in the North Region has been falling since 1962, two years before the national peak. In 1961 the North Region had a birth rate which, after adjustment for the sex/age structure of the region[7], was 4.0 per cent above the national average. By 1965 the adjusted rate was 2.2 per cent below the national average, having fallen particularly in the Tyneside Conurbation.

The number of deaths in the region has also been increasing relative to those in England and Wales as a whole. Using the latest revised Area Comparability Factors, deaths were 7.5 per cent above the national average in 1961 and 13.0 per cent above it in 1965. The region's share of the national natural increase has declined from 7.8 per cent in 1962-3 to 6.2 per cent in 1965-6. (These compare with 7.0 per cent and 6.9 per cent of the population of England and Wales in 1962 and 1965.)

The region has also been affected by a net outflow of population. This is not just the case in the conurbation - though, like all others, that has indeed experienced a net outflow. It is also true of the remainder of the region, and this is the only case[8] where the part of a region outside a conurbation has

(7) See column 10 in Table 13 in Part I of *The Registrar General's Statistical Review* for the year concerned. Area Comparability Factors taking full account of the sex/age information in the 1961 Census for births and deaths will be found in columns 9 and 15 of that volume for 1965 (H.M.S.O., 1967).

(8) This analysis treats Wales I (South East Wales and Monmouthshire) as a conurbation.

experienced such an outflow. The tentative analysis of migration data suggests that this may be due to movements to other countries, however, and that the part of the region outside the conurbation had a net inflow of migrants from the remainder of England and Wales (which latter includes the conurbation itself).

With a falling share of natural increase and a net outflow through migration, the North Region's share of the population of England and Wales fell - from 7.0 per cent in 1962 to 6.9 per cent in 1966. It must, however, be remembered that the region's population has been increasing in absolute terms throughout the period, by an average of 10 thousand persons a year.

Yorkshire and Humberside

The home population of this region has been affected by the following changes:

Thousand persons

	Natural increase			*Net migration*			
	Births	*Deaths*	*Net*	*Inter-regional*	*Others*	*Net*	*Overall change*
1962-3	+ 85.1	- 57.7	+ 27.4	- 4.3	+ 0.7	- 3.6	+ 23.8
1963-4	+ 85.8	- 54.7	+ 31.1	- 5.6	- 0.2	- 5.8	+ 25.3
1964-5	+ 86.0	- 55.4	+ 30.6	- 3.8	- 0.4	- 4.2	+ 26.4
1965-6	+ 84.9	- 59.1	+ 25.8	- 3.3	- 2.2	- 5.5	+ 20.3

Yorkshire and Humberside is affected by a net outflow of population, though to a smaller degree than the other two northern regions. The net outflow is smaller both in absolute terms and in relation to the region's population. It should also be borne in mind that the outflow includes the effects of urban overspill from York to Flaxton (in the North Region) and from Sheffield to north-east Derbyshire (in the East Midland Region).

The region's adjusted birth rate in 1965 was 1.1 per cent above the national average, but the death rate was 8.7 per cent higher. This last is a feature common to the three northern regions, but less marked in Yorkshire and Humberside than in the other two. Both birth and death rates are particularly high in the conurbation.

North West Region

The home population of this region has been affected by the following changes:

Thousand persons

	Natural increase			*Net migration*			
	Births	*Deaths*	*Net*	*Inter-regional*	*Other*	*Net*	*Overall change*
1962-3	+ 124.7	- 87.2	+ 37.5	- 5.9	-	- 5.9	+ 31.6
1963-4	+ 125.6	- 79.9	+ 45.7	- 13.0	- 1.3	- 14.3	+ 31.4
1964-5	+ 125.1	- 82.3	+ 42.8	- 2.5	- 1.4	- 4.0	+ 38.8
1965-6	+ 121.7	- 86.8	+ 34.9	- 1.8	- 3.4	- 5.2	+ 29.7

After making allowances for the sex/age structure of its population, the North West is the region with the highest birth rate - and the highest death rate too. This is particularly marked in the conurbations. In 1965 the South East Lancashire conurbation had an adjusted birth rate 5.5 per cent above that for England and Wales, and an adjusted death rate 18.3 per cent above the national rate. In 1965-6 this region had 12.2 per cent of the country's natural increase, compared with 14.0 per cent of the home population in mid-1965.

There was the typical pattern of a net outflow of population from the conurbations, and a net inflow to the remainder of the region. The overall net outflow of 5.2 thousand persons from the region in 1965-6 was less than the average rate of 7.4 thousand for the four years 1962-6.

The North West has a higher proportion of people under 15 than England and Wales as a whole (23.8 per cent, compared with 22.8 per cent) and a lower proportion of adults in the working age groups (9) (60.9 per cent compared with 62.0 per cent).

East Midland Region

Recent changes in the home population of this region have been as follows:

Thousand persons

	Natural increase			*Net migration*			
	Births	*Deaths*	*Net*	*Inter-regional*	*Other*	*Net*	*Overall change*
1962-3	+ 58.7	- 36.4	+ 22.3	+ 1.6	+ 3.4	+ 5.0	+ 27.3
1963-4	+ 59.7	- 35.0	+ 24.7	+ 3.8	+ 3.7	+ 7.5	+ 32.2
1964-5	+ 60.0	- 34.3	+ 25.7	+ 6.7	+ 3.1	+ 9.8	+ 35.5
1965-6	+ 59.7	- 37.2	+ 22.5	+ 2.6	+ 1.5	+ 4.1	+ 26.6

(9) Males aged 15 to 64 years and females aged 15 to 59 years.

After allowing for the sex/age structure of its population in 1965, the East Midland Region has a birth rate 1.1 per cent above the average for England and Wales and a death rate 2.6 per cent below the national rate. In 1965-6 it had 7.9 per cent of the country's natural increase compared with 6.9 per cent of the population of persons all ages. With a net inward movement of population (including that from Sheffield which is in the Yorkshire and Humberside Region, to north east Derbyshire and that from Scotland to Corby), the East Midland's share of the population of England and Wales rose from 6.80 per cent in mid-1962 to 6.86 per cent in mid-1966.

The population of the East Midland Region is younger than that of England and Wales as a whole. In 1965, 23.4 per cent of its population was under 15 (compared with 22.8 per cent nationally) and a further 62.3 per cent was in the working age-groups (compared with 62.0 per cent). Men past their 65th birthday and women aged 60 and over thus formed 14.3 per cent of the region's population, compared with 15.2 per cent for England and Wales.

West Midland Region

Recent changes in the home population of the West Midland Region have been as follows:

Thousand persons

	Natural increase			*Net migration*			
	Births	*Deaths*	*Net*	*Inter-regional*	*Other*	*Net*	*Overall change*
1962-3	+ 92.5	- 53.0	+ 39.5	- 3.8	+ 10.2	+ 6.4	+ 45.9
1963-4	+ 93.9	- 50.3	+ 43.6	- 4.9	+ 12.5	+ 7.6	+ 51.2
1964-5	+ 94.9	- 50.4	+ 44.5	- 6.1	+ 10.8	+ 4.7	+ 49.9
1965-6	+ 94.8	- 53.9	+ 40.9	- 2.6	+ 8.2	+ 5.6	+ 46.5

After allowing for the sex/age structure of its population in 1965, the West Midland Region has a birth rate about 2.2 per cent above that for England and Wales and a death rate some 4.3 per cent above the national rate. In mid-1965 the region had 10.4 per cent of the country's population, and in the following twelve months it had 14.3 per cent of the natural increase. This reflects both the region's low percentage of older people and its high proportion of women in the fertile age-groups:

Percentage (1965)

	Females 15-44	*Males 65 and over Females 60 and over*
West Midland Region	20.6	12.9
England and Wales	19.8	15.2

The net population inflow into the region was remarkably steady at an average 6 thousand a year throughout the four years 1962-6. It is the resultant of an outflow from the conurbation (-14 thousand in 1965-6) and an inflow to the remainder of the region (+20 thousand in 1965-6).

The region's share of the home population of England and Wales rose from 10.3 per cent in mid-1962 to 10.4 per cent four years later.

East Anglia

East Anglia has an area more than half as large again as that of North West England and similar in size to the areas of the East Midland and the West Midland Regions. In terms of population, on the other hand, it is the smallest region: in 8.3 per cent of the area of England and Wales it holds 3.3 per cent of the population. Relatively, however, East Anglia is the fastest growing region, and recent changes have been as follows:

Thousand persons

	Natural increase			*Net migration*			
	Births	*Deaths*	*Net*	*Inter-regional*	*Other*	*Net*	*Overall change*
1962-3	+ 25.2	- 18.9	+ 6.3	+ 3.6	+ 1.7	+ 5.3	+ 11.6
1963-4	+ 26.3	- 16.7	+ 9.6	+ 5.5	+ 1.7	+ 7.2	+ 16.8
1964-5	+ 26.9	- 17.8	+ 9.1	+ 11.8	+ 1.4	+ 13.2	+ 22.3
1965-6	+ 26.4	- 17.9	+ 8.5	+ 14.6	+ 0.4	+ 15.0	+ 23.5

After allowing for the sex/age structure of its population in 1965, East Anglia has a birth rate some 3.3 per cent below that of England and Wales, but a death rate 11.3 per cent below the national rate. Because, however, of the region's low proportion of females aged 15-44 (19.2 per cent in 1965, compared with 19.8 per cent for England and Wales), the crude birth rate in East Anglia is about 6.1 per cent below the national average; and, because of a high proportion of older persons (for males 65 and over and females 60 and over it was 16.3 per cent in 1965 compared with 15.2 per cent nationally), the crude death rate is up to the national average. East Anglia thus had 3.0 per cent of the country's natural increase in 1965-6.

As a factor in population increase, however, net migration is twice as important as natural increase in East Anglia. The figures for the earlier years in the table above would be larger were it not for the net movement of armed forces away from the region; but, even so, a substantial increase in net movements from the rest of the country is apparent. This is, to a considerable extent, the result of schemes under the *Town Development Act* of 1952.

South East Region

Population changes in the South East Standard Region have recently been as follows:

Thousand persons

	Natural increase			*Net migration*			
	Births	*Deaths*	*Net*	*Inter-regional*	*Other*	*Net*	*Overall change*
1962-3	+ 295.6	- 202.9	+ 92.7	- 11.4	+ 41.6	+ 30.2	+ 122.9
1963-4	+ 304.1	- 181.5	+ 122.6	- 19.9	+ 48.8	+ 28.9	+ 151.5
1964-5	+ 305.5	- 184.9	+ 120.5	- 38.6	+ 41.6	+ 3.0	+ 123.5
1965-6	+ 301.9	- 192.5	+ 109.4	- 23.1	+ 28.4	+ 5.3	+ 114.7

Both the birth and death rates in the South East are lower than would be expected on the basis of the sex/age structure of the region's population alone and, though the region has both a relatively high number of older persons and a slightly higher than average number of females aged 15 to 44, its natural increase in 1965-6 was 38.2 per cent of that of England and Wales although only 35.5 per cent of persons of all ages lived in the region.

Migration to the South East in 1960-61 amounted to some 103 thousand persons, but this was reduced substantially by the operation of the Commonwealth Immigrants Act and averaged only 4 thousand persons a year (including the effects of changes in the levels of armed forces) in 1964-6. A substantial net inflow from other countries is still thought to be occurring, and a net outflow to the remainder of England and Wales is therefore deduced.

In terms of population the South East is much the largest region in England and Wales, and substantially different demographic influences are at work in different parts of the region.

Greater London (the GLC Area) is the country's largest conurbation, and it is influenced by the net outflow of populations experienced by all the conurbations - in spite of a net inflow from other countries. In 1962 its population was just over 8.0 million, by mid-1966 it was some 88 thousand lower - a fall of 1.1 per cent. Bearing in mind that births exceeded deaths in London by about 217 thousand in the same period, a net outflow of 30 thousand persons can be deduced for these four years. The outflow averaged 62 thousand persons in 1962-4 but 92 thousand in the following two years.

The birth rate in London is slightly below the national average, but the death rate is relatively lower still. The death rate is low in spite of a rather high proportion of old people and the birth rate is low in spite of a high proportion of young females. The contrast in structure between Greater London, the other parts of the South East, and England and Wales is shown by the following figures which relate to mid-1965:

/

Percentages

	Females 15-44	*Persons 0-14*	*Males 15-64 and Females 15-59*	*Males 65 and over Females 60 and over*
Greater London	20.6	20.3	64.2	15.5
Outer Metropolitan Area	20.7	24.1	62.7	13.2
Remainder of South East	18.3	21.9	59.0	19.1
South East	20.1	21.8	62.5	15.7
England and Wales	19.8	22.8	62.0	15.2

Allowing for the high proportion of younger females, the birth rate in London is about 7.7 per cent below the national rate. This presumably reflects in part the relatively low proportion of married women in these groups in London. (In 1961, 62.5 per cent of females aged 15-44 in the old Greater London Conurbation were married, compared with 67.8 per cent for England and Wales as a whole).

The net outflow of population from Greater London is doubtless related to the net inflow to the remainder of the South East. For the period April 1960 - April 1961, the results of the 1961 Census suggest that Greater London had the following balances with other areas:

Thousand persons

Source/Destination	*To GLC Area*	*From GLC Area*	*Net balance*
Outer Metropolitan Area	+ 45.0	- 122.3	- 77.3
Remainder of South East	+ 28.4	- 50.6	- 22.2
Other regions of England & Wales	+ 53.3	- 54.1	- 0.8
All parts of England and Wales	+ 126.7	- 227.0	- 100.3

The **Outer Metropolitan Area** is presumably still the area most affected by the net outflow of population from London, and has a substantial net inflow of population (45 thousand persons in 1965-66). Its birth rate is above the national average, but no more than is to be expected in view of the high proportion of females aged 15-44 in the area - as high a proportion as that in London. The Outer Metropolitan Area has a very low proportion of older persons, however, and a lower crude death rate than in any other conurbation or regional remainder. This death rate is even lower than the sex/age structure of the population would suggest; and, with 10.3 per cent of the population of England and Wales in mid-1965, the area had 15.4 per cent of the country's natural increase in the following year. In that year the area's population increased by 1.8 per cent, half by natural increase and half by migration. This was the most rapid overall increase in any conurbation or regional remainder.

The **Remainder of the South East** had its highest relative net inflow of population in 1964-5, 51 thousand persons, equivalent to 1.2 per cent of its population. The effects of this were offset to some extent, however, by a relatively low rate of natural increase. This resulted from one of the lowest crude birth rates and one of the highest crude death rates in the country. These were a partial reflection of the low proportion of younger adult females and the high proportion of older people. In 1965-6 the net inflow was 45 thousand persons (1.1 per cent of the mid-1965 population).

South West Region

Population changes in this region have recently been as follows:

Thousand persons

	Natural increase			*Net migration*			
	Births	*Deaths*	*Net*	*Inter-regional*	*Other*	*Net*	*Overall change*
1962-3	+ 59.4	- 46.2	+ 13.2	+ 21.7	- 2.7	+ 19.0	+ 32.2
1963-4	+ 61.0	- 42.2	+ 18.8	+ 28.9	- 5.0	+ 23.9	+ 42.7
1964-5	+ 61.9	- 42.6	+ 19.3	+ 23.1	- 4.6	+ 18.5	+ 37.8
1965-6	+ 61.5	- 45.3	+ 16.2	+ 23.2	- 6.4	+ 16.8	+ 33.0

The South West has a low crude birth rate and a high crude death rate. The low birth rate is accounted for by the sex/age structure of the region's population. The death rate is not as high as the high proportion of older persons in the region would suggest; and, after allowing for that, the adjusted death rate has recently been about 7 per cent less than the national figure.

This is a region where the net inflow of migrants is as significant as natural increase in accounting for population growth. Movements to Swindon account for only a small part of net migration to the region, most of which must be due to individual initiative.

The South West was the only region in which births in 1965 exceeded those in 1964. Initial data for 1966 suggests that births in that year were below their 1965 peak in this region.

Wales and Monmouthshire

Recent population changes in this region have been as follows:

Thousand persons

	Natural increase			*Net migration*			
	Births	*Deaths*	*Net*	*Inter-regional*	*Other*	*Net*	*Overall change*
1962-3	+ 45.9	- 34.6	+ 11.3	+ 2.5	- 2.4	+ 0.1	+ 11.4
1963-4	+ 47.1	- 33.0	+ 14.1	+ 4.2	- 4.0	+ 0.2	+ 14.3
1964-5	+ 46.9	- 33.1	+ 13.6	+ 6.3	- 3.6	+ 2.7	+ 16.5
1965-6	+ 45.2	- 34.5	+ 10.7	+ 3.4	- 4.6	- 1.2	+ 9.5

The relatively low birth rate in Wales is accounted for by the sex/age structure of its population, but the death rate is some 10.4 per cent higher than could be accounted for by such factors alone. This is largely the result of the high rate in Wales I (South East Wales and Monmouthshire).

Overall, the region has had a balanced picture for migration, but this results from a net outflow from Wales I (4 thousand persons in 1965-6) and a net inflow to the remainder of Wales.

Projections for the future

Projections of the future regional distribution of the home population of England and Wales making allowance for migration as well as for natural increase were first made by the General Register Office in 1965 and published in the *The National Plan* (10). Revised projections were prepared in 1966, taking account, *inter alia* of the Government Actuary's Department's latest national projections. The latest regional projections were discussed in an article published in the November 1966 issue of *Economic Trends* (11).

(10) Cmnd. 2764, H.M.S.O., 1965.
(11) No. 157. The article was entitled *'Revised Projections of the regional distribution of the United Kingdom population in 1971 and 1981'.*

MIGRATION

External migration

Current external migration statistics are drawn from the International Passenger Survey*. It may be worth repeating in this volume two features of the Survey which are very important in the interpretation of the results. These are, first, the Survey definition of a migrant in terms of his declared intention on duration of residence and, the exclusion from the Survey of passenger traffic between the United Kingdom and the Irish Republic.

The Survey estimates of migration to and from the United Kingdom which, for the reason just given, are not the same as the total effect of migration on the population but which nevertheless give a clear picture of trends for the four calendar years, 1963 to 1966 (in thousands) are as follows:-

Year	*Into the United Kingdom*	*Out from the United Kingdom*	*Net migration*
1963 ≠	172	230	-58
1964	212	272	-60
1965	219	294	-75
1966	219	302	-83

The flows in both directions show firm upward trends, the trend for the outflow being steeper than that for the inflow, which was slowed down by the imposition, and subsequent tightening, of Commonwealth immigration controls. The result is an upward trend in the net outward movement from the United Kingdom.

The age composition of these net movements is shown in the following table:-

---

* For a detailed description of the International Passenger Survey, see the *Registrar General's Statistical Review* for England and Wales for the year 1963, Part III, Commentary.

≠ The figures for 1963 do not include those for aliens travelling on long sea routes, which are not available for that year. It is estimated, however, that these movements totalled 4-5 thousand in each direction, leaving the trend in the net figures substantially unaffected.

Table C9. Age distribution of net migration of the United Kingdom, 1963 to 1966

(Figures in thousands)

Age-group	1963	1964	1965	1966
Under 15	- 20	- 24	- 30	- 40
15-24	- 9	- 3	-	+ 4
25-44	- 20	- 26	- 38	- 36
45-64	- 5	- 5	- 5	- 8
65 and over	- 5	- 2	- 2	- 2

Population, in net terms, is lost from every age-group in each year since 1963, except in 1966, when there is a small net gain in the 15-24 category. The net loss of persons of age under 15 has been rising steadily and steeply until, in 1966, the figure is double the 1963 level. Because the gross inflow in the under 15 age-group fell slightly from 43.0 thousand in 1964 to 41.2 thousand in 1966, the increased net outflow in this age-group is due almost entirely to higher gross emigration. The only age-group which shows a steadily falling net loss is the 15-24, to the extent that the net loss is converted into a net gain in 1966. Net emigration of persons aged 25-44 almost doubled between 1963 and 1965, but there is a drop of 2 thousand in 1966.

The overall net flows of persons conceal contrasting patterns between the net movements of married and those of single persons. Net migration analysed by marital status (excluding widowed and divorced) is shown in Table C10.

Table C10. Net migration of the United Kingdom by age and marital status, 1964 to 1966*

(Figures in thousands)

Age-groups and marital status		1964	1965	1966
Under 15	single	- 24	- 30	- 40
	married	-	-	-
15-24	single	+ 5	+ 9	+ 13
	married	- 9	- 9	- 9
25-44	single	- 13	- 4	+ 3
	married	- 14	- 32	- 38
45-64	single	- 3	0	0
	married	0	- 4	- 7
65 and over	single	- 1	0	0
	married	0	- 1	- 1

* A break-down of net migration by marital status is not available for 1963.

There has been a net loss of married persons of all ages, the trend in any age-group being either rising or roughly flat. The level of net emigration of married persons is largest in age-group 25-44, where the proportionate rise is also very high, with the 1966 level almost treble the 1964 level. In contrast, there has been an increasing net gain of single persons aged 15-24, and a decreasing net loss in the remaining age-groups; in 1966 there is a net gain of single persons aged 25-44. Thus, there is a steadily widening gap between the net emigration of single and that of married persons, and, with the higher net emigration of married persons, the net outflow of dependants has also been going up.

The decreasing net outflow of single persons of all ages is due to a fall in both inward and outward movement of such persons, but the fall is less for the inward than for the outward stream. As regards married persons, the changes have been in the opposite direction; both the inward and outward movement have been increasing, but the increase in the outward stream outstrips the increase in the inward stream, resulting in the bigger net outflows discussed above. These overall relative trends between the inward and outward movements are reflected in individual age-groups, except for single persons in age-group 15-24, in which both inflow and outflow have been rising. The actual figures for all ages combined are, in thousands:-

		1964	*1965*	*1966*
Single	in	157	135	134
	out	193	161	160
Married	in	46	77	78
	out	70	124	133

The 1965/66 change is very small compared with the change in 1964/65.

The direction of net movements for England and Wales is the opposite to that for the United Kingdom as a whole. The reason for this is that the rest of the United Kingdom are net exporters of population to England and Wales and to countries beyond the United Kingdom. Estimates of these flows are not obtained from the International Passenger Survey but are derived indirectly*. Table C11 shows the net movement of migrants by categories into/out of England and Wales in the seven years ended 30th June 1966. These streams are identified by the citizenship of the people in them and each of them is "net" in the sense that only a single figure is available of the balance between the main flow, which may be inwards to the United Kingdom or outwards from the United Kingdom, and the corresponding return flow.

* See the *Registrar General's Statistical Review* for 1963, Part III, Commentary pages 28-32, for a detailed account of these estimating procedures.

Table C11. Estimated net intake (+) or outflow (-) of categories of migrants, mid-1960 to mid-1966, England and Wales

(Figures in thousands)

Year ending 30th June	On foreign passports*	On passports from the old Commonwealth countries	On passports from the new Commonwealth countries	By direct traffic UK with the Irish Republic	From the rest of the UK	On UK passports beyond the UK and the Irish Republic	Net migration
1960	+ 30	+ 15	+ 60	+ 32	+ 24	- 37	+ 124
1961	+ 20	+ 10	+ 130	+ 35	+ 29	- 41	+ 183
1962	+ 20	+ 15	+ 170	+ 32	+ 30	- 42	+ 225
1963	+ 20	- 3	+ 50	+ 30	+ 32	- 79	+ 50
1964	+ 30	+ 13	+ 70	+ 28	+ 31	- 120	+ 52
1965	+ 36	+ 1	+ 54	+ 33	+ 27	- 108	+ 43
1966	+ 36	- 2	+ 48	+ 30	+ 27	- 122	+ 17

* Including those of the Republic (formerly Union) of South Africa.

The trend in the net movement to England and Wales is clearly downwards. The very big drop in 1963 was due to the *Commonwealth Immigrants Act*, which came into force in mid-1962 and which was reflected in the reduced net flows from the Commonwealth. The effect of the tightening up of Commonwealth immigration controls in 1965 is again evident in the reduced net immigration from the Commonwealth between mid-1964 and mid-1966. On the other hand, in this period, the net inflow of aliens and citizens of the Irish Republic increased.

Although the current inflow of aliens exceeds that from the Irish Republic, the alien average (27 thousands) for the seven years ended mid-1966 is lower than the corresponding average (31 thousands) for the Irish Republic. The average alien inflow is also smaller than that (29 thousands) from the rest of the United Kingdom.

Nearly three quarters of the net inflow from the rest of the United Kingdom came from Scotland.

The picture for the stream of holders of United Kingdom passports also shows a rising trend in net outward movement. This was very steep in the period mid-1963 to mid-1966, when the net outflow reached its highest level at 122 thousands. The increase was partly due to the assisted passage schemes for emigration to Australia; another contributing factor may have been the unfavourable economic climate.

The comments so far have been confined to the size of these streams. The net impact of these flows on the sex and age structure of the total population of England and Wales, for years ending 30th June 1965 and 1966 is shown in the following table.

Table C12. Change in sex and age structure by migration, of the total population, England and Wales, 1st July 1964 to 30th June 1965, and 1st July 1965 to 30th June 1966

(Figures in thousands)

1st July 1964 to 30th June 1965		Age-group	1st July 1965 to 30th June 1966	
Males	Females		Males	Females
+ 25	**+ 18**	**All ages**	**+ 9**	**+ 8**
- 9	- 5	0-14	- 8	- 10
+ 23	+ 14	15-24	+ 15	+ 25
+ 7	+ 6	25-34	+ 5	- 5
+ 1	+ 1	35-44	- 1	- 2
+ 2	-	45-64	- 2	+ 1
-	+ 2	65 and over	-	- 1

The greatest absolute gains for both sexes in both periods are experienced in the age-group 15-24 inclusive, but the sex pattern of these gains is reversed in the two periods. These net age-specific movements contrast with those shown in Table C9, where the greatest net movement is in the 25-44 age-group, which relates to the whole of the United Kingdom. The reason for this is that the net outward flow from Scotland and Northern Ireland are relatively very heavy in the combined age-group 15-44 inclusive.

Internal migration

Intercensally, net movements within England and Wales are estimated as a residual item in the Registrar General's mid-year population estimates. The estimated net flow is then sub-divided into movements within England and Wales and movements involving other countries. For this purpose, the net inflow to England and Wales of persons not holding UK passports and of residents of Scotland and Northern Ireland is divided between regions on the basis of regional changes in persons born outside England and Wales between 1951 and 1961. These are estimated on the basis of census data, after making due allowance for deaths of immigrants present in 1951

in the areas concerned. The net number of UK passport holders assumed to leave each region for other countries is obtained by apportioning the estimated total for England and Wales according to the number of persons who left the region concerned for other regions in England and Wales in the year preceding the 1961 Census.

The following table shows the estimated annual net regional distribution of migration split into internal and external components from mid-1961 to mid-1966.

Table C13. Estimated net mid-year migration into or out of the home populations of England and Wales and revised standard regions, mid-1961 to mid-1966

(Figures in thousands)

	mid-1961 to mid-1962			mid-1962 to mid-1963			mid-1963 to mid-1964			mid-1964 to mid-1965			mid-1965 to mid-1966		
	Internal	External	Total	Internal	External	Total	Internal	External	Total	Internal	External	Total	Internal	External	Total
England and Wales	–	+ 225	+ 225	–	+ 50	+ 50	–	+ 52	+ 52	–	+ 43	+ 43	–	+ 17	+ 17
Revised standard regions:*															
North	+ 4	+ 2	+ 6	– 6	– 2	– 8	– 9	– 4	– 13	– 7	– 4	– 11	– 4	– 5	– 9
Yorkshire and Humberside	+ 1	+ 11	+ 12	– 6	+ 1	– 5	– 4	–	– 4	– 3	–	– 3	– 3	– 2	– 5
North West	+ 7	+ 11	+ 18	– 7	–	– 7	– 13	– 1	– 14	– 2	– 1	– 3	– 4	– 3	– 7
East Midland	+ 2	+ 14	+ 16	+ 5	+ 3	+ 8	+ 5	+ 4	+ 9	+ 5	+ 3	+ 8	+ 2	+ 2	+ 4
West Midland	– 4	+ 31	+ 27	– 1	+ 10	+ 9	– 2	+ 12	+ 10	– 5	+ 11	+ 6	– 3	+ 8	+ 5
East Anglia	+ 2	+ 8	+ 10	+ 7	+ 2	+ 9	+ 9	+ 2	+ 11	+ 14	+ 1	+ 15	+ 15	–	+ 15
South East	– 40	+ 141	+ 101	– 15	+ 42	+ 27	– 17	+ 49	+ 32	– 37	+ 42	+ 5	– 28	+ 28	–
South West	+ 22	+ 5	+ 27	+ 22	– 3	+ 19	+ 28	– 5	+ 23	+ 29	– 5	+ 24	+ 22	– 6	+ 16
Wales	+ 7	+ 1	+ 8	–	– 2	– 2	+ 4	– 4	–	+ 6	– 4	+ 2	+ 4	– 5	– 1

* For definitions on new standard regions in terms of old standard regions see pages 18 and 19 of Regional populations section of the Population chapter.

The regions in the table are bracketed into four categories which geographically correspond to (1) the North of England; (2) the Middle of England; (3) the South of England and (4) Wales. The general pattern of migration for these four groups of regions is stable throughout the period mid-1961 to mid-1966. The first group consistently lost population except in 1961-62, the second and third consistently gained population and the fourth group was roughly on balance except in 1961-62.

These broad categories need more detailed examination. All regions experienced a substantially reduced inflow from outside England and Wales in 1962/63 following the coming into force of the *Commonwealth Immigrants Act* in mid-1962; in particular, the net internal gains of the three regions in the North of England were converted into net outflows to the rest of England and Wales, and these changes suggest that outside immigrants drifted to the North after arrival into England.

The group of regions in the middle of England continued, although on a smaller scale, to show net inflows after mid-1962. Individual regions in this group differ in their net exchange with the rest of England and Wales. East Anglia's net gain

from the rest of England and Wales steadily increased over the period, but West Midland has been a net exporter of population to the rest of the country; the overall net movement to the West Midland is entirely due to immigration from outside England and Wales.

The internal pattern of the third category of regions shows diverse trends. Up to mid-1965 both the South East and the South West Regions experienced net gains in population, but the gain of the former region was steadily and substantially declining so that at mid-1966 the net position was a nil balance from all movements. Since the South East has been a net exporter of population to the rest of England and Wales for the last five years, the position in 1966 is mainly due to tighter Commonwealth immigration controls, which initially in 1962/1963 reduced the net external inflow to the South East by about 100 thousand persons. On the other hand, the net inflow to the South West steadily rose up to mid-1965. The only region which has consistently been in a position of near balance is Wales.

The absolute size of the net flow of a region shows the extent to which the size of that region's population is affected, but to compare this effect between regions, allowance must be made for the size of the populations of individual regions. For this purpose, the average annual net flow of each revised standard region between mid-1962 to mid-1966 should be expressed as a proportion of its average population for the same period. These average net flows and rates are shown below.

Revised standard region	Annual average thousands	Annual average rate per thousand population
North	- 10	- 3
Yorkshire and Humberside	- 4	- 1
North West	- 8	- 1
East Midland	+ 7	+ 2
West Midland	+ 8	+ 2
East Anglia	+ 12	+ 8
South East	+ 16	+ 1
South West	+ 20	+ 6
Wales	-	-

Although the average net movement in absolute terms is very large for the South East and South West Regions, East Anglia has the highest net migration relative to population size, with an average inflow of 8 persons per thousand of its population. Thus, the average rate of change in population size due to migration between mid-1962 to mid-1966 is greatest for East Anglia where it substantially exceeds even the combined net rate of loss of all the regions in the North of England. The relative impact of net movements on the population size of the South West is also very high.

Migration is only one element, with natural increase the other, in population change. We need to know, for any region, whether a high net immigration rate is offset by a low natural increase, and vice versa. For each region, the average difference between births and deaths in the period mid-1962 to mid-1966 is expressed in terms of the region's average population in the same period.

Table C14. Annual average net migration and average net natural increase rates, and the average rate of change, England and Wales, mid-1962 to mid-1966

Revised standard region	Average net migration	Average net natural increase	Average rate of change
	rate per thousand population (persons)		
North	- 3	+ 6	+ 3
Yorkshire and Humberside	- 1	+ 6	+ 5
North West	- 1	+ 6	+ 5
East Midland	+ 2	+ 8	+ 10
West Midland	+ 2	+ 9	+ 11
East Anglia	+ 8	+ 6	+ 14
South East	+ 1	+ 7	+ 8
South West	+ 6	+ 5	+ 11
Wales	-	+ 5	+ 5

Because East Anglia has a relatively very high migration rate combined with an average rate of natural increase, this region shows the highest rate of increase in population between mid-1962 and mid-1966. Both regions in the Midlands have low migration rates, but, with highest rates of natural increase, they show rates of population change comparable with that for the South West, which has the second highest net migration rate (treble that for the Midlands) but a comparatively low rate of natural increase. The South East Region, despite its large absolute net gain in population, shows only an average rate of population change which is a little more than half that for East Anglia.

Estimates of net migration for a region as a whole necessarily conceal differences within that region, and this is particularly significant in the South East. Although this region has been a net exporter of population to the rest of England and Wales, the net movement between its component Greater London Council Area and the rest of England and Wales (excluding the remainder of the South East) was nearly in balance in 1960/61. However, the Greater London Council Area experienced a net outward movement in 1960/61 of nearly 100 thousand persons, of which 77 thousand were gained by the Outer Metropolitan Area and 22 thousand by the rest of the South East.

MARRIAGES

In the commentary volume of the *Registrar General's Statistical Review of England and Wales* for 1964 attention was drawn to the striking change that has taken place in the last thirty years in the marriage habits of British women (the *Registrar General's Statistical Review of England and Wales*, Part III, Commentary pages 17-20). In 1931 only one spinster bride in ten was under twenty but in 1964, and again in 1965, three in ten were. At the time it was not possible to consider whether this change had occurred evenly in all sections of society, but since then statistics becoming available from the 1961 census make some consideration of that point possible.

Table 14 of the Fertility Tables from the 1961 census gives a distribution of women married once only and enumerated with their husbands by their age at marriage and their duration of marriage for each of 19 socio-economic groups. These figures, converted into percentage distributions by age at marriage for each of selected marriage durations are reproduced in Table C17; together with a comparable set of figures for the total of all the 19 socio-economic groups.

Before using these figures to illustrate changes in marriage habits it is necessary to remember that they do not exactly reproduce the distribution by age at marriage at the time when marriage occurred. This is because death, widowhood, divorce and migration into and out of the population do not affect all marriage age-groups equally. It is more likely that a woman who married aged 40 in any previous year would, by the census on 23 April 1961, have died, become widowed or divorced than would be true for a woman who had married in the same year aged 20. However within the age at marriage range of 16-30 this effect is not serious. That this is true is illustrated in Table C15 where the distribution at census date is compared with the distribution at the time of marriage for the brides of 1931 to 1935.

Table C15. Distributions of women married once only and of spinster brides

(per cent)

Age at marriage	Women still married once only at 23 April 1961 who married between 24 April 1931 and 23 April 1936	Spinster brides of 1931-35	Ratio
Under 20	9.8	9.5	1.03
20-24	49.4	48.0	1.03
25-29	30.1	29.6	1.02
30-34	7.9	8.4	0.94
35-39	2.1	3.1	0.68
40-44	0.6	1.4	0.43

It is clear that there are proportionately fewer women surviving as married once only who married over the age of 30 and proportionately rather more women surviving as married once only who married aged under 30. As between the three marriage age-groups under 30 however there is very little distortion and it can safely be assumed that there is no differential distortion for the separate socio-economic groups.

The section of Table C17 for the total of all socio-economic groups shows again that compared with the marriages of the 1930's there has been a very large increase in the proportion of women who marry aged under 20 and a matching decline in the proportion of women who marry aged 25-29.

Looking first at the column of figures for women whose marriage duration at the time of the census was 25-29 years, that is to say, women who married between April 1931 and April 1936, the first thing to notice is that women whose husbands were in socio-economic groups 1-6 and socio-economic groups 13 and 14 had a lower than average proportion of brides marrying under 20 and a larger than average proportion of brides marrying aged 25 and over. These are the socio-economic groups containing employers and managers, professional people, non-manual workers (other than personal service workers) and farmers. The other socio-economic groups, mainly manual workers, had a slightly larger than average proportion of brides aged under 20 at marriage and a slightly smaller than average proportion of brides aged 25 and over.

What has happened since then? Based on this census tabulation, which only contains the women who survived as married once only, and speaking very broadly, about 17 per cent of the total have shifted from the marriage age-group 25-29 to the marriage age-group under 20 with only a slight increase in the marriage age-group 20-24.

In the higher social groups the proportion in the marriage age-group 25-29 has fallen by about that amount. The reduction is smallest for farmers working on their own account (a reduction of nine per cent) and largest for junior non-manual workers (a reduction of 22 per cent). The corresponding increases however have been more in the marriage age-group 20-24 than in the marriage age-group under 20. The largest increase in the marriage age-group under 20 in the higher social groups (1-6, 13 and 14) was for the junior non-manual group (an increase of 12 per cent) but amongst professional employees the increase was only 5 per cent and amongst professional self-employed people the increase was negligible.

Amongst the wives of manual workers on the other hand the increase in the proportion in the marriage age-group under 20 was generally larger than the reduction in the proportion in the marriage age-group 25-29. For example, in the very large group of women whose husbands were semi-skilled manual workers the proportion in the marriage age-group 25-29 declined from 27 per cent for the women who married in the 1930's to 9.5 per cent for the women who married in 1960-61 a fall of 17 per cent whereas the proportion of women who married aged under 20 was 12 per cent for the brides of the 1930's and 35.5 per cent for the brides of 1960-61, an increase of 23 per cent.

This analysis suggests very clearly that although the trend towards earlier marriage has occurred in all sections of society it has gone very much further amongst manual workers than it has amongst non-manual, professional and managerial workers. Indeed the difference between the marriage patterns of different

Table C16. Distributions of women surviving as married once only and enumerated with their husbands

(per cent)

Date of marriage	Age at marriage	Wives of professional employees	Wives of unskilled manual workers	Difference
Married between April 24 1931 and April 23 1936	under 20	4.4	13.7	+ 9.3
	20-24	40.2	47.1	+ 6.9
	25-29	41.3	25.8	- 15.5
	30-44	14.1	13.5	- 0.6
Married between April 24 1960 and April 23 1961	under 20	9.9	40.7	+ 30.8
	20-24	60.5	42.0	- 18.5
	25-29	21.0	9.4	- 11.6
	30-44	8.6	7.9	- 0.7

socio-economic groups has widened since the 1930's. This is shown in Table C16 in which the women whose husbands were unskilled manual workers are compared with women whose husbands were professional employees. This is no doubt associated with the fact that professional people continue in full time education until they are over 20 but that in itself is not a sufficient explanation. The age classification used in Table C17 is the age of the wife at marriage and Table 18 in the Fertility Tables from the 1961 Census shows that only a third of the husbands who continued in full time education until they were over 20 married women who had continued in full time education until they were over 20 and that more than a third of them married women who left school before they were 17. Clearly highly educated men tend to postpone their marriage until well after their twentieth birthday and when they do marry they give more weight to choosing a bride who is relatively close to them in age (as indeed do nearly all men) than they do to choosing a bride who was herself educated beyond her twentieth birthday.

Table C17. Fertility, 1961 Census of England and Wales, women married once only and enumerated with their husbands

Percentage distribution by age at marriage for each socio-economic group of husband and for selected durations of marriage.

Socio-economic group	Age at marriage	Marriage duration (completed years)					
		0	5	10-14	15-19	20-24	25-29
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
1. Employers and managers in central and local government, industry, commerce, etc. - large establishments	Under 20	8.9	7.9	8.3	9.8	6.0	4.4
	20-24	54.2	56.9	52.6	56.6	49.5	46.2
	25-29	22.4	22.6	27.1	23.5	34.1	39.0
	30-34	7.2	8.7	7.6	6.8	7.9	8.5
	35-39	5.1	2.8	3.1	2.4	2.0	1.5
	40-44	2.1	1.2	1.4	0.9	0.5	0.4
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
2. Employers and managers in industry, commerce, etc. - small establishments	Under 20	13.6	15.3	11.7	13.8	9.6	7.1
	20-24	56.1	52.9	52.1	54.1	50.5	51.1
	25-29	19.3	21.8	24.1	20.7	29.9	33.0
	30-34	6.2	5.5	7.2	7.2	7.6	6.8
	35-39	2.4	2.7	3.6	2.9	1.9	1.4
	40-44	2.3	1.8	1.3	1.2	0.5	0.5
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
3. Professional workers - self-employed	Under 20	3.6	1.9	3.6	5.1	2.9	3.1
	20-24	49.3	48.1	44.7	45.2	38.2	35.3
	25-29	31.2	35.4	36.3	32.2	40.4	42.3
	30-34	11.6	7.7	8.5	11.4	13.5	13.6
	35-39	2.2	4.6	5.0	4.4	3.8	4.3
	40-44	2.2	2.3	2.1	1.7	1.1	1.4
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
4. Professional workers - employees	Under 20	9.9	8.4	7.4	9.4	5.4	4.4
	20-24	60.5	58.5	55.7	56.6	44.6	40.2
	25-29	21.0	24.9	26.7	24.0	37.7	41.3
	30-34	6.0	5.8	6.7	7.2	9.4	11.2
	35-39	2.1	1.6	2.7	2.2	2.3	2.3
	40-44	0.5	0.8	0.8	0.7	0.5	0.6
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
5. Intermediate non-manual workers	Under 20	7.5	9.5	8.5	10.6	6.5	5.3
	20-24	62.0	59.1	53.6	55.3	46.8	43.2
	25-29	21.4	21.5	26.4	23.0	33.9	40.1
	30-34	5.7	6.7	7.2	7.2	9.6	9.0
	35-39	2.2	2.2	3.3	3.1	2.6	1.9
	40-44	1.2	0.9	1.1	0.9	0.7	0.5

Table C17 - *(continued)*

Socio-economic group	Age at marriage	Marriage duration (completed years)					
		0	5	10-14	15-19	20-24	25-29
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
6. Junior non-manual workers	Under 20	18.3	14.7	11.8	13.3	8.2	6.5
	20-24	60.3	59.9	53.8	52.9	45.8	44.7
	25-29	13.3	16.5	22.7	20.5	31.9	35.5
	30-34	4.8	5.5	6.6	8.1	10.0	9.8
	35-39	2.5	2.0	3.3	3.5	3.2	2.8
	40-44	0.9	1.5	1.8	1.7	0.9	0.6
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
7. Personal service workers	Under 20	24.6	17.3	13.9	16.2	13.7	11.1
	20-24	47.9	47.5	45.6	46.1	45.5	51.7
	25-29	17.5	15.6	21.8	19.3	25.6	27.6
	30-34	7.1	14.0	10.5	11.1	10.3	7.1
	35-39	1.4	1.1	6.0	4.9	3.8	1.8
	40-44	1.4	4.5	2.3	2.3	1.1	0.7
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
8. Foremen and supervisors - manual	Under 20	15.9	19.5	15.1	18.3	12.6	10.8
	20-24	48.9	53.7	56.5	57.9	54.4	53.8
	25-29	17.0	13.7	19.7	16.3	24.5	28.5
	30-34	7.6	7.7	5.3	4.7	6.5	5.5
	35-39	8.0	2.7	2.4	2.0	1.5	1.0
	40-44	2.5	2.7	1.0	0.8	0.5	0.4
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
9. Skilled manual workers	Under 20	31.7	25.7	19.3	19.7	14.5	11.8
	20-24	52.9	55.6	54.9	55.5	51.8	53.0
	25-29	9.9	11.6	17.7	16.2	24.4	26.9
	30-34	3.1	4.3	5.0	5.6	6.6	6.3
	35-39	1.7	1.8	2.2	2.2	2.0	1.6
	40-44	0.8	1.0	1.0	0.9	0.6	0.5
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
10. Semi-skilled manual workers	Under 20	35.4	26.7	18.0	18.4	14.1	11.9
	20-24	47.4	50.2	51.4	51.5	48.6	50.9
	25-29	9.5	13.2	18.9	17.6	24.9	26.8
	30-34	4.0	5.8	6.6	7.4	8.3	7.8
	35-39	2.7	2.6	3.3	3.5	3.0	2.1
	40-44	1.1	1.7	1.9	1.5	1.1	0.6
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
11. Unskilled manual workers	Under 20	40.7	29.1	20.2	19.5	14.5	13.7
	20-24	42.0	46.2	45.0	44.3	43.8	47.1
	25-29	9.4	13.2	19.5	17.0	24.5	25.8
	30-34	3.9	6.2	7.6	10.5	11.4	9.8
	35-39	2.4	3.5	4.9	5.7	4.3	2.8
	40-44	1.6	1.8	2.9	3.1	1.6	0.9

Table C17 - *(continued)*

Socio-economic group	Age at marriage	Marriage duration (completed years)					
		0	5	10-14	15-19	20-24	25-29
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
12. Own account workers (other than professional)	Under 20	20.4	22.6	17.3	17.7	12.1	9.4
	20-24	50.7	52.0	49.1	48.2	46.7	49.7
	25-29	14.7	14.5	19.9	19.1	27.9	29.0
	30-34	6.0	5.4	7.1	8.3	9.2	8.5
	35-39	6.0	2.8	4.4	4.5	3.0	2.6
	40-44	2.2	2.7	2.2	2.2	1.1	0.8
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
13. Farmers - employers and managers	Under 20	11.9	8.9	9.1	8.4	7.7	7.6
	20-24	58.5	59.1	49.8	48.6	44.4	44.6
	25-29	21.4	19.8	26.6	26.3	32.5	33.5
	30-34	6.9	7.4	9.0	10.6	11.8	10.6
	35-39	0.6	2.7	3.9	4.2	2.5	3.3
	40-44	0.6	1.9	1.5	1.9	1.0	0.4
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
14. Farmers - own account	Under 20	12.1	10.9	9.8	10.9	8.4	6.9
	20-24	54.1	58.8	46.9	44.9	38.3	43.1
	25-29	22.9	19.9	24.6	25.0	31.0	31.5
	30-34	7.0	4.7	10.2	10.4	13.9	13.4
	35-39	1.9	3.3	4.6	5.9	6.7	3.4
	40-44	1.9	2.4	4.0	3.0	1.7	1.8
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
15. Agricultural workers	Under 20	32.7	29.6	22.6	18.0	14.0	12.8
	20-24	53.8	51.6	48.9	49.7	45.2	49.1
	25-29	6.5	11.7	17.5	19.0	25.7	25.9
	30-34	4.7	4.9	6.0	7.7	9.7	8.5
	35-39	1.6	1.2	3.4	3.5	4.0	3.0
	40-44	0.6	0.8	1.6	2.0	1.4	0.7
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
16. Members of armed forces	Under 20	37.5	29.6	19.0	18.5	18.4	12.3
	20-24	50.9	52.1	55.5	57.6	49.2	45.1
	25-29	9.1	12.0	18.8	18.8	25.5	29.9
	30-34	1.4	4.5	4.9	3.3	5.1	7.0
	35-39	0.7	1.2	1.5	1.7	1.1	3.3
	40-44	0.3	0.7	0.3	0.2	0.7	2.5
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
17. Indefinite	Under 20	36.0	20.7	16.9	14.2	13.0	10.2
	20-24	49.5	47.4	46.1	45.0	41.5	43.2
	25-29	7.3	12.4	19.9	19.2	24.3	28.5
	30-34	2.5	11.6	7.5	10.7	11.3	11.8
	35-39	3.3	4.4	5.0	5.9	6.2	5.7
	40-44	1.5	3.6	4.6	5.0	3.7	2.5

Table C17 - *(continued)*

Socio-economic group	Age at marriage	Marriage duration (completed years)					
		0	5	10-14	15-19	20-24	25-29
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
18. Students	Under 20	14.3	28.9	18.0	35.0	12.5	-
	20-24	67.3	52.6	54.0	55.0	75.0	50.0
	25-29	15.5	15.8	22.0	-	12.5	-
	30-34	2.4	2.6	6.0	10.0	-	50.0
	35-39	-	-	-	-	-	-
	40-44	0.4	-	-	-	-	-
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
19. Others	Under 20	26.0	12.5	27.3	19.5	10.1	14.8
	20-24	56.0	40.6	42.2	42.2	41.5	45.8
	25-29	10.0	21.9	15.6	12.3	26.6	23.9
	30-34	4.0	9.4	7.0	11.7	13.3	7.7
	35-39	2.0	6.2	6.2	9.1	6.9	6.5
	40-44	2.0	9.4	1.6	5.2	1.6	1.3
	All ages under 45	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Total all groups	**Under 20**	**26.7**	**21.2**	**15.7**	**16.4**	**11.7**	**9.8**
	20-24	**53.4**	**54.6**	**52.8**	**53.3**	**48.8**	**49.4**
	25-29	**12.4**	**15.1**	**20.7**	**18.9**	**27.7**	**30.1**
	30-34	**4.2**	**5.5**	**6.2**	**7.0**	**8.3**	**7.9**
	35-39	**2.2**	**2.2**	**3.0**	**3.0**	**2.6**	**2.1**
	40-44	**1.1**	**1.4**	**1.5**	**1.4**	**0.8**	**0.6**

B I R T H S

Introduction

The calendar year 1965 seems to have marked a turning point in the trend of British fertility; for the first time since 1955 the number of births was less than in the year before. But the trend of fertility is like the tide; it moves slowly and it is easy to mistake a spell of extra-small or extra-large waves for a change in the tide itself. Careful analysis of the underlying factors is needed and even then it may not be possible to come to any firm conclusion.

This chapter first examines year by year fluctuations in the number of births and shows that the fall in 1965 and 1966 was much larger than any recent annual fluctuation and almost certainly represents a change of trend, in the short-term if not in the long.

There follows a discussion of the long-term trend of British fertility mainly in terms of the size of the completed families of successive marriage cohorts but also introducing the concept of the length of the period of parenthood. Although the average completed family for women who married at ages 20-24 has declined from about 7 for the cohort of 1860 to less than $2\frac{1}{2}$ for the cohort of 1950, the period of parenthood has changed much less because of the greater length of childhood. The economic and social deprivations associated with the great depression of the 1930's and the war of 1939-1945 reduced the families of the 1930-1940 cohorts and it is now clear that the post-war cohorts will show some recovery; the most recent cohorts will probably have families of about the same size as the 1930 cohort.

The next section of the chapter considers in more detail the changes in the last ten years and in 1965 in particular. The cohorts of the 1950's started their family building at a rapid pace - after ten years of marriage the 1955 cohort had achieved a family size equal to that of the 1925 cohort at the same duration. In 1965 however parents reduced their childbearing and it is suggested that they may have been influenced by the prospect of childhood being further lengthened by the raising of the compulsory school leaving age to 16 in 1971 (announced in 1964) and by the acceptance by the government of the *Robbin's Report on Higher Education**. The reduction was most marked at marriage duration over five years and for fourth and later births, which suggests that these couples, perhaps aided by modern contraceptive methods, may be extremely efficient at limiting their family to the size they want.

**Committee on Higher Education*, 1961-1963, *Report*. September 1963. (Command Paper 2154).

Annual fluctuations in the number of births

To assess the fluctuations it is first necessary to decide what the trend has been; the fluctuations can then be expressed as changes in the deviations from the trend. The number of births can never be a good guide to the trend of fertility, however sophisticated the mathematical techniques are, and it is not worth carrying out any deep analysis of the number of births. A simple five-year moving average is an adequate trend for the purpose of assessing fluctuations, with special adjustments at obvious turning points - such as can now be seen to have occurred in 1956 - where moving averages tend to "cut corners". From 1957 to 1962 the annual increases in the moving average varied very little from an average of 23 thousand; this can be taken as the trend and extrapolated to 1966 for the purposes of testing whether there has been a change of trend. Looking at the fourteen years from 1951 (when the extreme post-war fluctuations died down) to 1964, Table C18 shows that the deviation of the actual number of births from the "trend" never exceeded 13 thousand, that the change in this deviation from year to year - the "fluctuation" - never exceeded 14 thousand, and that the *root-mean-square* fluctuation was 8 thousand.

Table C18. Analysis of live births in England and Wales

(Thousands)

Year	Births	5 year moving average	Trend	Deviation	Fluctuation	Fluctuation squared
1951	678		676	+ 2		
2	674		676	- 2	- 4	16
3	684	676	676	+ 8	+10	100
4	674	680	676	- 2	-10	100
5	668	690	676	- 8	- 6	36
6	700	701	696	+ 4	+13	169
7	723	716	716	+ 7	+ 3	9
8	741	740	740	+ 1	- 6	36
9	749	762	762	-13	-14	196
1960	785	785	785	0	+13	169
1	811	808	808	+ 3	+ 3	9
2	839	833	833	+ 6	+ 3	9
3	854	849	856	- 2	- 8	64
4	876	856	879	- 3	- 1	1
5	863	(867)	902	-39	-36	1,296
6	849*	(877)	925	-76	-37	1,369

*Estimated figure

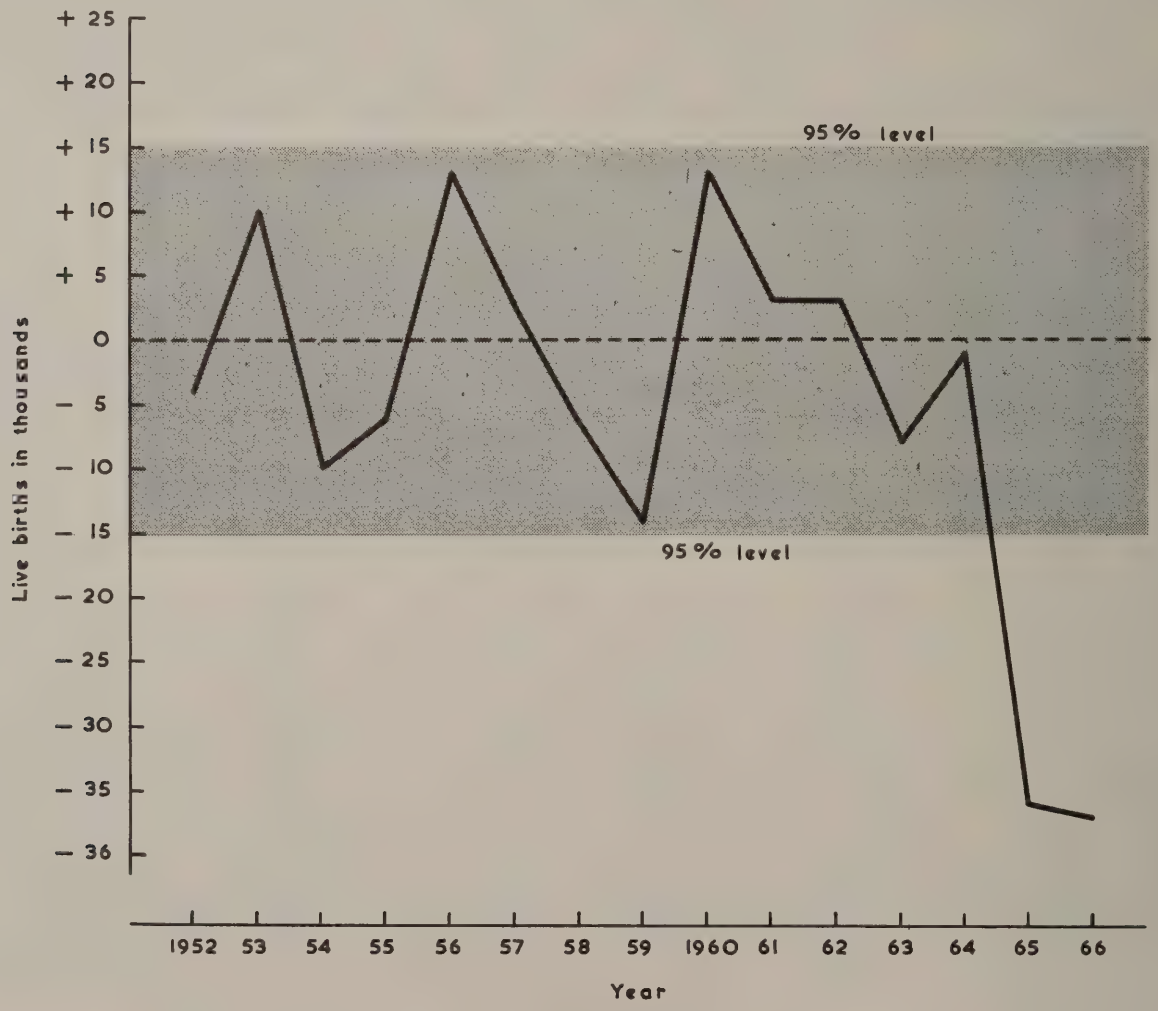
1952-64 Total 914
Average 70.3
Root-Mean-Square 8.4

This last measure - the *root-mean-square* fluctuation - can be used as a rule-of-thumb approach to detecting a change of trend. If the fluctuations were being measured about the true trend, 95 out of every 100 values should normally be in the

range ± twice the *root-mean-square* fluctuation. The last fifteen years are shown on Diagram 2, with the "acceptable zone" of ± twice the *root-mean-square* fluctuation shaded.

For the last two years the fluctuations are large - over four times the *root-mean-square* fluctuation - and they are both of the same sign -. (Since these fluctuations are year-to-year changes in the deviation from the trend the effect of two successive large fluctuations of the same sign is cumulative.) This is good presumptive evidence of a "real" change in trend and certainly justifies a close examination of the latest period.

Diagram 2



Fluctuations about the trend in the annual number of births, 1952 to 1966, England and Wales

Before doing so, however, it is necessary to establish what the long-term trend has been in British fertility.

The long-term trend in fertility

In a full assessment of the trends in fertility it is necessary to consider marriage and marital fertility separately. This section of the chapter, however, is intended only to sketch in the background against which the most recent changes should be viewed and the discussion is solely in terms of marital fertility. To simplify this section still further the discussion will be limited to women who married when aged 20-24. This is, and has been for some time, the largest of the quinquennial marriage age-groups; for most of this century about 50 per cent of spinster brides were in this age-group. Table C19 shows the mean ultimate family size of a selection of cohorts of women who married aged 20-24.

Table C19. Mean ultimate family size of women aged 20-24 at marriage

Year of marriage	Number of liveborn children
1860	7
1880	6
1900	4
1910	3.5
1920	2.8
1930	2.4
1940	2.2
1950	2.3

This very striking reduction in the size of British families is well-known. What is less well-known is that the total length of time during which British couples are rearing their families has changed much less. There are two main reasons for this. One is that the children in smaller families are, and have always been, born at longer intervals than the children in larger families. The other is that the length of childhood - as indicated by the compulsory age of school attendance - has increased.

There is very little firm information about birth intervals in Britain. The most comprehensive set of data is given on pages 168 and 169 of the *Report on the Trend and Pattern of Fertility in Great Britain.** The figures given there were based on a sample of the returns for the Family Census of 1946 (undertaken in connection with the work of the Royal Commission on Population).

The first point that emerges from those figures is that for any given ultimate family size there was very little change between cohorts in the period from marriage to the birth of the youngest child in the family.

**The Trend and Pattern of Fertility in Great Britain. A Report on the Family Census of 1946,* Part 1 by D. V. Glass and E. Grebenik.

Table C20. Median intervals from marriage to last birth

(Months)

Date of first marriage	Ultimate family size		
	2 children	3 children	4 children
1900-09	74	112	141
1910-14	76	108	130
1915-19	69	102	140
1920-24	70	108	142
1925-29	73	121	

The period was disturbed by the war of 1914-18 and by the great depression of the 1930's and it is rash to try to deduce from these data what the intervals were in other periods. However it may be worth making *some* estimate and in the absence of other data it will be assumed that the intervals for the 1920-24 cohort are "normal" and would prevail in the absence of disturbing factors. The intervals for the three family sizes shown in Table C20 can also be used as a basis for estimating the median interval from marriage to the last birth for other family sizes.

The process is shown in Table C21. The intervals are all estimated by extrapolating or interpolating in the series of "average interval per child". The physiological minimum average interval between maternities has been taken as 24 months* and applied to a notional maximum of 15 children. The steps between 35 months on average between children in four-child families to 24 months on average between children in fifteen-child families have been made equal. The interval for one-child families has been extrapolated.

Table C21. Estimated total intervals from marriage to last birth and average intervals per child

(Months)

Size of family	Average interval per child	Total interval from marriage to last birth
1	33	33
2	35	70
3	36	108
4	35	140
5	34	170
6	33	198
7	32	224
8	31	248
9	30	270
10	29	290
11	28	308
12	27	324
13	26	338
14	25	350
15	24	360

**Population Studies* by R. G. Potter, Population Investigation Committee, November 1963, L.S.E.

The series of Tables C.1 - C.80 in the report on the 1946 Family Census give distributions of families by number of liveborn children by year of marriage and by age at marriage. Using those distributions in combination with the estimated intervals from marriage to last born shown in Table C21, it is possible to estimate the average interval from marriage to last birth for the whole of the 1900-09 cohort and the whole of the 1920-24 cohort of women marrying aged 20-24. The process is shown in Table C22.

Table C22. Estimated average intervals from marriage to last birth for women marrying aged 20-24

Number of live-born children	Interval from marriage to birth of last child in months	Number of women in 1900-09 marriage cohort	Number of women in 1920-24 marriage cohort
0	0	4,313	4,745
1	33	7,466	12,029
2	70	10,975	14,573
3	108	10,141	9,791
4	140	8,080	5,825
5	170	5,958	3,278
6	198	4,751	2,106
7	224	3,443	1,321
8	248	2,530	842
9	270	1,780	460
10	290	1,211	328
11	308	622	139
12	324	342	60
13	338	159	39
14	350	64	12
15	360	50	4
	Total	61,885	55,552
	Sum of products (Interval x Numbers)	7,821,602	5,069,357
	Average interval (months)	126	91

This method suggests a reduction of 35 months in the length of the childbearing period (from 126 months for the 1900-09 cohort to 91 months for the 1920-24 cohort). It is interesting and useful to compare this result with that which would be obtained by the much simpler method of using Table C21 directly. The 3.8 child families shown in the Family Census Tables for the 1900-09 cohort would then be assumed to have a childbearing period of 134 months [= 108 + (0.8 x $\overline{140-108}$)]. Similarly the 2.7 child families of the 1920-24 cohort would be assumed to have a childbearing period of 97 months [= 70 + (0.7 x $\overline{108-70}$)]. Thus, although there is a small difference in the *level* of the childbearing period, there is hardly any difference in the reduction of the childbearing period as estimated by this simple method and as estimated by the more elaborate method of Table C22. Since it is the *change* in the childbearing period that is of interest in the present context the simple method can be used to estimate the length of the childbearing period for each cohort from 1860 to 1940.

This involves yet another assumption, that the rough stability shown by the intervals for successive cohorts from 1900 to 1920 in Table C20 persisted all the way from 1860 to 1950 as well. The results are therefore only useable in a very approximate manner, but are worthwhile nevertheless.

Table C23. Estimated childbearing period

Year of marriage	Number of liveborn children	Childbearing period in years
1860	7	18½
1880	6	16½
1900	4	12
1910	3.5	10
1920	2.8	8½
1930	2.4	7
1940	2.2	6½
1950	2.3	7

The childbearing period for modern cohorts marrying aged 20-24 is about ten years shorter than it was for the cohort of 1860. However, the childbearing period is not the whole of the period during which parents are economically and emotionally responsible for their children. The childhood of the elder children is, of course, taking place while the younger ones are still being born but the childhood of the last child extends beyond the childbearing period. The childbearing period plus the childhood of the last child can be called the whole period of parenthood.

The concept of the length of childhood is difficult to define and harder to measure. Leaving school and beginning employment - which for this purpose can be considered as simultaneous - mark the end of the child's full economic dependence on the parents, although emotional dependence may last much longer, even beyond the 21st birthday which marks the end of childhood in traditional culture as well as in law. Also, future extensions of the payment of scholarships and grants may come to mean that economic dependence ends before the end of full-time education. But for the recent past and the present it can be assumed that schoolchildren were fully dependent on their parents, and that childhood and economic dependence ended at the same time.

The length of schooling has increased notably over the last century. Free primary education up to age of 10 was introduced in 1870 and became compulsory in 1880. The compulsory age was raised to 11 in 1893, to 14 in 1918 and to 15 in 1944.

Nineteenth century statistics on the age of entry to the labour force are dubious. The Census of 1851 contained an investigation into education* and although the accuracy of the statistics was not scientifically assessed they do provide some indication of the ages at which children entered employment. For the purposes of the report on education a special tabulation by single years of age was made from the entries in the column on the census form headed "Rank, Profession or Occupation" for 253,425 children between three and fifteen years of age. The sample was not

Census of Great Britain 1851. Education, England and Wales.

confined to any one part of the country but consisted of 32 Poor Law Unions[1] with a total population of about one million.

The column of the census form headed "Rank, Profession or Occupation" had the following instruction, on the other side of the form:

> **"WOMEN AND CHILDREN.** *The titles or occupations of ladies who are householders to be entered according to the above instructions. The occupation of women who are regularly employed from home, or at home, in any but domestic duties, to be distinctly recorded. So also of children and young persons. Against the name of children above 5 years of age, if daily attending school, or receiving regular tuition under a master or governess at home, write "Scholar" and in the latter case add "at home".*

Amongst the 202 thousand 10-15 year old girls who had their occupations distinctly enough recorded to be tabulated there were 58 thousand domestic servants and 2 thousand inn servants so that the instruction was understood to mean that domestic duties *at home* did not count but domestic service elsewhere did count. Out of the 4 million children aged 5-14, nearly 1.4 million were classified in the census statistics as neither "occupied" (not even in an unstated occupation) nor as "scholars". Presumably these children were living at home, possibly engaged in domestic duties at home or helping with a family enterprise but not having any paid occupation, and not receiving any formal instruction. The question is how many of them should be considered as still in their childhood for the present analysis. The special sample tabulation by single years of age adjusted to known national totals for quinquennial age-groups shows that this "undescribed" group made up 79 per cent of the boys at age 3, and 16 per cent of the boys at age 14. The full figures are shown in Table C24.

Table C24. Distribution of the occupational status of boys, Census 1851

(per cent)

Age last birthday	Scholars	Employed	Undescribed
3	21		79
4	41		59
5	51		49
6	57		43
7	64	1	35
8	61	3	36
9	60	7	33
10	55	14	31
11	46	22	32
12	37	36	27
13	25	46	29
14	16	68	16

[1] *Poor Law Unions.* Under an act of 1782 "for the better relief and employment of the poor", certain parishes were, with the consent of those concerned in the localities, combined into unions for poor law purposes. This partial re-organisation was made more general in England and Wales by the Poor Law Act of 1834, which vested the management of poor relief in Boards of Guardians.

It seems most unlikely that the 30 thousand 14 year old boys in the "Undescribed" group would be anything but economically active in the modern sense, even if only in a small holding or cottage industry. Similarly, it seems unlikely that any of the 73 thousand 7 year old boys in the "Undescribed" group would be anything but economically inactive. In the absence of any other information the proportion of the undescribed group of boys who are economically active will be assumed to rise from 0 at age 7 to 100 at age 14 in even increments.

Table C25. Adjusted distribution of the occupational status of boys, Census 1851

(per cent)

Age	Employed	Undescribed		Total active
		Active	Inactive	
7	1	0	35	1
8	3	5	31	8
9	7	9	24	16
10	14	13	18	27
11	22	18	14	40
12	36	19	8	55
13	46	25	4	71
14	68	16	0	84

These figures can be used to estimate an "expectation of childhood" in a similar manner to a life table.

Table C26(A). Derived expectation of childhood of boys, Census 1851

Age	Percentage still Inactive i.e. Still in Childhood	Years of childhood lived at that age per 100 total living	Total years of childhood lived above that age per 100 total living	Expectation of childhood in years
7	99		501	5.0
8	92		402	4.0
9	84		310	3.1
10	73		226	2.3
11	60		153	1.5
12	45		93	0.9
13	29		47	0.5
14	16		18	0.2
15	say 2		2	
16	say 0		0	

This very rough calculation places the end of childhood at about 12 years in the middle of the nineteenth century.

An exactly similar process can be carried out on the 1961 Census results, counting as "children" the young people enumerated other than as economically active, or institution inmates.

Table C26(B). Derived expectation of childhood of boys, Census 1961

Age	Years of childhood lived at that age per 100 total living	Total years of childhood lived above that age per 100 total living	Expectation of childhood in years
14	100	259	2.6
15	50	159	1.6
16	33	109	1.1
17	19	76	0.8
18-19	22	57	0.6
20-24	35	35	0.4

This suggests that the end of childhood now is at about 17 years, 5 years older than 100 years ago. Interpolation can be done using the dates at which the compulsory school attendance age was changed as keys, underlined in Table C27.

Table C27. Length of childhood for boys

Year of birth	Length of childhood in years
1851	12
1870	12
1880	13
1890	14
1900	15
1902	16
1910	16
1920	16
1927	17
1930	17
1940	17
1950	17
1952	18

Thus putting these pieces of information together suggests that the length of childhood has increased from about 12 years for the children born in 1860 to about 17 years for the children born in 1940. If the childhood of the last child is added to the period between marriage and the birth of the last child, the resulting period of parenthood has not changed very much.

Table C28. Estimated period of parenthood for selected cohorts

Year of marriage	Year of birth of last child to women marrying aged 20-24	Childhood of last child in years	Total period of parenthood in year for women marrying aged 20-24
1860	1879	12	31
1870	1887	13	30
1880	1897	14	31
1890	1904	16	30
1900	1912	16	28
1910	1920	16	26
1920	1929	17	26
1930	1937	17	24
1940	1947	17	24
1950	1957	18	25

Here the reduction is 19 per cent (from 31 years to 25 years) which is very much less than the 67 per cent reduction in the number of liveborn children. It indicates that as the length of childhood increased the period of childbearing decreased.

In this approach two factors have been ignored. One is infant mortality, which has been ignored because only if the *last* child died in infancy would the total period of parenthood be reduced and then only by the interval between the birth of the last child but one and the last. Thus even for the marriage cohort of 1860, for whose children infant mortality was about 15 per cent, the reduction in the average period of parenthood due to infant mortality would be 0.15 x 32 months or half a year. For the marriage cohort of 1940 the reduction would be negligible, infant mortality being less than 3 per cent.

The second factor is the extent to which the period of parenthood should be reckoned consecutively rather than concurrently. During many of the 31 years of parenthood of the 1860 marriage cohort the parents would have been rearing several children at once and it could be argued that the reckoning should be in terms of total child-years. In that reckoning infant mortality is more important and must be taken into account but the interval between children is irrelevant because, in that reckoning, there is no difference between bearing and rearing quadruplets and bearing and rearing four children born at three year intervals. The estimates are set out in Table C29.

Table C29. Estimated total experience of parenthood

Year of marriage	Average length of childhood in years	Proportion of children surviving childhood	Years of childrearing per child born	Mean ultimate family size of women marrying aged 20-24	Total child-rearing child-years experienced by parents
1860	12	0.72	8.6	7	60
1870	12½	0.74	9.2	6.5	60
1880	13½	0.76	10.3	6	62
1890	15	0.77	11.6	5	58
1900	16	0.79	12.6	4	50
1910	16	0.83	13.3	3.5	47
1920	16½	0.88	14.5	2.8	41
1930	17	0.91	15.5	2.4	37
1940	17	0.94	16.0	2.2	35
1950	17½	0.97	17.0	2.3	39

The 1860 cohort marrying aged 20-24 had an average 7 children whereas the 1950 cohort had 2.3 children, a reduction of 67 per cent. However for the same two cohorts the reduction of the period of parenthood was 19 per cent and the reduction of the total experience of parenthood in child-years was 35 per cent.

It is not necessary to select one of these alternative measures as the 'true' one. The period of parenthood may be the operating factor for some parents and the total child-years of childrearing may be the operating factor for others.

The steep fall in the length of the period of childbearing (a concomitant of the fall in the average family size) has been partly offset in its effect as the cumulative duration of parenthood by an increase in the length of childhood accompanied by an increase in the survivorship of children.

To indicate this negative association between the length of childhood and the period of childbearing does not necessarily indicate a causal connection but it is a reason to search for one.

For a large part of the period parents have been able to exert some control over the number of children that they bear. The evidence is that contraception had little if any effect on the number of children born to the marriage cohort of 1860. A healthy fertile woman marrying aged 20 enjoying sexual intercourse twice a week with no contraception would expect about 10 children*, compared with the average of 8 born to women in the 1860 marriage cohort, but allowance needs to be made for spontaneous abortions and maternal mortality. The publicity afforded to contraception by the Bradlaugh-Besant trial in the late 1870's resulted in a wider spread of modern methods and since then the size of family achieved has been much affected by the size desired.

That leads on to the question, "What determines the size of family that people want?"

*Assuming that the minimum average birth interval increases for physiological reasons from 24 months at marriage to 31-35 months at age 40. *Population Studies* by R. G. Potter, Population Investigation Committee, November 1963, L.S.E.

Although some couples now have a clear idea when they marry of the family they want, many do not, and 100 years ago it can be presumed that a much larger proportion did not. After some years of marriage and after the birth of one or more children however a much larger proportion of couples have a clear idea of how many children they want. It may be the very experience of childrearing that sets up the motivations of parents about further childbearing. Only when parents have actually experienced the emotional and economic costs as well as the happiness of childrearing do their motivations become really firm.

The hypothesis can be summarised as follows:

> Over the last 100 years childhood has been lengthened by some five years, mainly by the successive acts of the state in introducing and extending the period of compulsory education, adding greatly to the costs and burdens of childrearing. At the same time infant mortality declined from about 15 per cent, to less than 2 per cent. Partly as a response to these changes people have succeeded in reducing the period of childbearing and the number of children born. But the reductions achieved in these two measures have been larger than the lengthening of childhood and the decrease in infant mortality would explain; improved contraceptive techniques have also made it possible to reduce the number of unwanted pregnancies.
>
> These factors alone led to a steep fall in the average size of family from the 1860 cohort onwards into the twentieth century. In addition, however, the cohorts of the 1920's, 1930's and early 1940's had as background to their early years of marriage either the slump of 1920-22, the general strike of 1926 or the great depression of the 1930's, with an unemployment rate which averaged 17 per cent from 1930 to 1938, or the war of 1939-45, with hundreds of thousands of men away from home for long periods and powerful motives against childbearing. These cohorts reduced their childbearing even lower than would be explained by the combined influences of lengthening childhood, falling infant mortality and improved contraception. The post-war cohorts, for example the 1950 cohort, unaffected by depression or war, allowed their parenthood experience to extend to a length nearly equal to that of the 1920 cohort. However, because of the increases in the length of schooling and in the proportion of children who survived, the number of children born to the 1950 cohort was well below the number born to the 1920 cohort.

This hypothesis, it should be emphasised, is expressed entirely in terms of the completed fertility of successive marriage cohorts. It ignores any short-term bunching or stretching of childbearing within a given total. Thus the very large fluctuations in annual fertility rates that took place at the end of each of the "world wars" have been ignored; they could, however, be superimposed on the pattern described by the "cohort" hypothesis without disturbing it.

Also, the increase in fertility rates that occurred between 1955 and 1964 can be considered as a reflection in current fertility terms of the increase in family size as between the cohorts of 1935-1940 and the post-war cohorts. With this interpretation it is the five years of stable fertility rates between 1950 and 1955 that are hard to explain and not the subsequent increase. If successive cohorts

after the wartime brides did intend to have successively larger families the expectation would have been gradually rising annual fertility rates from 1946 onwards. However the post-war baby boom simultaneously affected nearly all cohorts back to those who married in the early 1930's and the pattern was extremely disturbed. In spite of this disturbance, it is strange that even after five years of marriage the cohort of 1951 had had fewer children than the cohort of 1946.

Whatever the explanation may be it now seems reasonable to adopt the hypothesis suggested, namely that the cohorts of 1920-1940 had their family building depressed by the special events and background of the years from 1920-1945 and that the post-war cohorts will have slightly larger families.

Against that background what interpretation should be put upon the fall in births in 1965 and 1966?

Fertility in 1965

It has already been shown (see pages 46 to 48) that the fall in the number of births since 1964 is almost certainly not a chance fluctuation but does represent a change of trend at least in the short-term. It is possible by examining the statistics for 1965 more closely, to define particular groups of the childbearing population in which the change has been concentrated and so, perhaps to come to a preliminary conclusion about whether the change in trend is long-term, in the sense that it represents a departure from the hypothesis suggested on page 58. Broadly speaking there are three blocks of detailed fertility rates which are available each year. Firstly, there are the rates calculated for each current age and each current marriage duration; secondly, there are the fertility rates calculated for each marriage age and each year of marriage, and finally, there is a limited amount of information on the distribution by family size achieved so far. Each of these three blocks of data will be considered in turn.

Fertility rates by marriage duration and current age

These fertility rates are published each year in Table KK of Part II of the *Registrar General's Statistical Review of England and Wales;* a summary of the changes in the fertility rates in the years since 1955 is given in Table C30 below. It emerges immediately from Table C30 that the fall in fertility in 1965 was most marked at marriage durations of greater than five years. At durations of five years or less the percentage drop in the fertility rate compared with 1964 was much less and in some age-groups there were still small increases in fertility rates at these short durations. This seems to indicate that whatever the social, political or economic forces which brought about the reduction in fertility, they operated more strongly on women who had been married for more than five years than on women who had been married for a short period.

Table C30. Annual percentage changes in legitimate fertility rates by marriage duration and current age, England and Wales

Current age	Period	Duration (completed years)										
		All	0	1	2	3	4	5	6	7	8	9 †
All ages	**1955-62**	**2.7**	**3.2**	**1.8**	**3.1**	**3.4**	**3.3**	**2.9**	**3.6**	**3.5**	**4.0**	**4.0**
	1962-63	**0.9**	**0.0**	**1.7**	**2.9**	**3.1**	**0.0**	**1.0**	**1.8**	**1.4**	**-0.8**	**1.0**
	1963-64	**2.8**	**1.7**	**0.3**	**2.1**	**3.4**	**2.6**	**0.5**	**1.2**	**2.8**	**2.5**	**1.0**
	1964-65	**-2.7**	**0.0**	**0.7**	**-2.1**	**-1.8**	**-1.3**	**-2.0**	**-5.2**	**-6.1**	**-3.3**	**-5.8**
Under 20	1955-62	1.7	2.5	1.3	0.9	-1.9						
	1962-63	-0.5	-0.2	-0.3	3.6	3.6						
	1963-64	2.5	4.3	0.0	-2.6	-2.5						
	1964-65	0.7	0.6	0.9	-1.8	2.9						
20-24	1955-62	1.8	1.9	1.4	2.9	2.6	2.3	0.7	0.6	-1.5	-3.7	
	1962-63	0.4	-0.3	1.3	1.0	2.2	-2.7	0.0	1.0	7.0	-6.5	
	1963-64	0.7	-0.3	-0.3	1.7	2.8	2.0	-0.9	1.0	-2.0	21.8	
	1964-65	-2.1	-1.6	0.3	-3.0	-2.7	-2.3	-3.2	-11.8	-7.2	-4.2	
25-29	1955-62	2.6	3.3	2.1	2.9	3.5	3.3	3.0	3.4	2.8	2.9	3.3
	1962-63	0.5	-0.3	2.8	4.5	1.9	-0.4	0.0	1.6	1.9	-2.1	-2.3
	1963-64	1.0	0.3	1.0	3.6	4.5	2.5	-0.9	0.5	1.2	2.1	-0.8
	1964-65	-3.8	0.0	0.7	-1.4	-0.7	-0.4	-1.9	-6.9	-5.5	-5.6	-6.2
30-34	1955-62	2.4	3.4	1.7	2.9	3.4	3.0	3.0	3.5	3.7	4.3	3.7
	1962-63	0.9	-1.0	3.7	8.3	8.4	5.3	0.5	1.3	0.0	-0.8	0.9
	1963-64	0.9	3.4	2.1	-1.5	0.4	3.2	4.3	0.6	2.9	1.7	0.0
	1964-65	-6.1	-2.6	-4.8	1.2	-2.8	-4.5	-2.1	-1.2	-7.0	-3.3	-6.5

Fertility rates by marriage age and year of marriage

These are the true cohort rates which, added up over a lifetime, give the cohort family sizes in terms of which the discussion of the long-term trend was couched. They therefore provide the most suitable basis for discussing the most recent past. Unfortunately though, they lag behind the fertility rates by current age and marriage duration just considered. This is because the most recent rates, for example, those occurring at a duration of five completed years to women who married at age 20-24 in 1959, include only a very few births which occurred as early as January 2nd 1964 (those occurring on that day to women who married on January 1st 1959), correspondingly only a very few births which occurred on December 30th 1965 (those occurring on that day to women who married on December 31st 1959), and, of course, larger proportions

of the births which occurred in the intervening period. Comparing the births to this group of women married at age 20-24 in 1959 in Table MM of the 1965 *Statistical Review* (35,172) to the births which occurred to the corresponding group of women (Married at age 20-24 in 1958) in Table MM of the 1964 *Statistical Review* (34,946) shows that there was no fall. Thus it is no good looking in these rates for any localisation of a general decline, because there was no general decline.

Table C31 however presents a summary of the changes in these rates over eleven years.

The period of generally rising fertility from 1955 to 1964 stands out clearly though even during that period there is a sprinkling of decreases, especially amongst women who married under 20 or over 35. This is summarised in Table C32 which shows simple counts of the number of minus signs appearing in Table C31.

Table C31. Difference between fertility rates for current year and preceding year, by age at marriage, for selected durations only

Women married once only, 1954-55 to 1964-65, England and Wales

Age of marriage	Period	Duration of marriage (completed years)													
		0	1	2	3	4	5	6	7	8	9	10	15	20	25
All ages under 45	1954-55	.001	-.001	0	-.010	.009	.001	0	-.001	.001	-.001	-.003	0	-.001	0
	1955-56	.011	-.006	.012	.004	-.005	.016	.006	.003	.002	-.002	.001	.001	-.001	0
	1956-57	.010	.010	.004	.010	.009	-.005	.018	.003	.004	.003	.002	.001	0	.001
	1957-58	.002	.007	.007	.005	.009	.008	-.005	.017	.002	.006	.006	.002	.001	-.001
	1958-59	.012	.002	.014	.004	.004	.003	.004	-.005	.012	.001	.001	0	0	0
	1959-60	.004	.006	.001	.008	-.001	.004	.003	.003	-.007	.009	.001	0	.001	-.001
	1960-61	.015	.004	.013	.017	.013	.010	.009	.007	.014	-.002	.008	.001	-.001	0
	1961-62	.015	.005	.007	.002	.003	0	-.005	-.001	-.005	0	-.002	0	.001	.001
	1962-63	.004	.003	.008	.010	.011	.005	.009	.002	.002	.003	.002	.001	.002	-.001
	1963-64	.004	.002	.005	.008	.005	.007	.003	.007	-.001	.002	.002	0	0	.001
	1964-65	-.002	.002	-.001	-.020	.001	-.002	.015	-.003	.005	-.003	0	0	-.001	0
Under 20	1954-55	-.012	-.002	-.005	-.007	.005	-.002	.004	-.005	.003	.001	-.003	-.001	-.002	-.001
	1955-56	-.014	-.002	.006	.002	.004	.018	.005	.003	.004	.009	.001	-.003	-.002	-.001
	1956-57	.006	.003	-.001	.008	.006	-.007	.021	.003	.004	.003	.011	-.001	.003	-.001
	1957-58	-.004	.009	.007	-.005	.007	.005	-.005	.022	.002	.009	.005	.003	0	.001
	1958-59	.013	.001	.011	.002	-.001	.003	.001	-.007	.015	-.003	.001	-.005	-.002	-.001
	1959-60	.006	.004	.002	.002	-.015	-.001	-.004	0	-.008	.010	-.001	.002	0	-.001
	1960-61	.029	-.001	.006	.015	.014	.002	.006	0	.012	-.004	.019	.003	0	.001
	1961-62	.012	.009	.008	.001	.001	-.001	-.005	-.003	-.009	.001	-.012	.002	-.003	.001
	1962-63	.020	.011	.030	.026	.017	.015	.013	.010	.006	.011	.007	.007	.002	0
	1963-64	0	-.021	-.025	-.010	-.020	-.016	-.014	-.011	-.019	-.011	-.016	-.005	-.002	-.001
	1964-65	.007	.002	-.004	-.009	.002	-.005	.001	-.004	.001	-.007	-.003	-.006	-.002	-.001
20-24	1954-55	0	-.005	-.001	-.011	.012	0	-.001	-.001	.003	-.001	-.003	0	-.001	0
	1955-56	.011	-.010	.013	.005	-.009	.019	.006	.002	.001	-.001	.001	0	0	.001
	1956-57	.007	.010	.003	.010	.011	-.008	.020	.003	.005	.003	.004	0	-.001	0
	1957-58	.001	.006	.009	.003	.007	.009	-.006	.018	.001	.005	.005	.002	0	0
	1958-59	.007	.002	.011	.004	.005	.003	.004	-.006	.012	0	0	.001	0	-.001
	1959-60	.003	.004	-.002	.008	.002	.003	.004	.003	-.007	.011	.002	-.001	0	0
	1960-61	.005	.005	.015	.014	.010	.009	.005	.005	.011	-.004	.009	0	.001	0
	1961-62	.010	.004	.005	.006	.004	.003	-.003	.001	-.002	0	-.004	.003	0	0
	1962-63	-.003	-.002	.002	.006	.009	0	.007	-.002	-.001	.003	.001	0	0	0
	1963-64	.003	.010	.016	.015	.011	.013	.007	.011	.002	.003	.004	-.001	.001	0
	1964-65	-.007	.001	-.001	-.001	0	-.002	.001	-.002	.005	-.004	-.001	0	-.001	.001
25-29	1954-55	.003	0	.002	-.011	.006	-.001	-.003	.001	0	-.001	-.001	.001	0	-
	1955-56	.023	-.002	.014	.001	-.002	.011	.002	-.002	.002	-.002	.005	-.001	0	-
	1956-57	.007	.014	.008	.011	.003	-.004	.016	.002	.001	.003	.002	0	0	-
	1957-58	.007	0	-.004	.011	.014	.008	-.006	.011	-.001	.001	.002	0	0	-
	1958-59	.010	.003	.023	.007	.007	.003	.005	-.005	.012	0	0	0	0	-
	1959-60	.002	.008	.004	.009	-.004	.007	.002	.005	-.007	.008	-.001	0	0	-
	1960-61	.015	.009	.013	.017	.012	.007	.011	.005	.010	-.001	.010	.001	0	-
	1961-62	.012	.002	.009	.001	.005	.004	-.004	.001	-.003	-.001	-.004	.002	0	-
	1962-63	-.019	-.008	-.014	-.004	-.003	-.004	.001	-.005	-.002	-.003	-.002	-.001	-.001	-
	1963-64	.005	.015	.017	.012	.018	.012	.011	.014	.005	.007	.006	-.001	.001	-
	1964-65	-.004	.002	.003	.001	-.004	.001	.003	.001	.007	.002	-.001	.001	0	-
30-34	1954-55	.006	-.002	.004	-.014	.013	.004	0	-.002	.002	.003	-.001	-.001	0	-
	1955-56	.016	-.014	.008	.008	-.007	.008	.001	.002	-.001	-.003	.003	0	0	-
	1956-57	.016	.008	.005	-.006	-.001	-.008	.010	.004	-.002	0	0	0	-	-
	1957-58	-.007	.010	.007	.007	.005	.005	-.003	.009	.006	.003	0	0	-	-
	1958-59	.004	.003	.014	-.002	.001	-.007	.001	-.010	.006	-.001	.001	0	-	-
	1959-60	.017	.007	-.006	.015	-.004	.005	.001	.004	-.004	.007	.001	0	-	-
	1960-61	.001	.004	.012	.006	.012	.007	.004	.002	.009	-.006	.002	0	-	-
	1961-62	.010	.007	.003	.007	.001	.001	-.002	0	-.010	.003	-.003	0	-	-
	1962-63	-.005	-.010	.005	.001	-.001	-.001	.003	-.004	.002	-.004	.001	0	-	-
	1963-64	.010	.021	.006	.011	.019	.011	.004	.008	.001	.005	-.002	0	-	-
	1964-65	-.001	-.005	.001	.002	-.008	.004	.003	.003	.002	0	.004	0	-	-
35-39	1954-55	0	.013	-.006	-.006	.004	.003	-.001	.002	0	0	-.001	0	-	-
	1955-56	.015	-.003	.003	-.003	-.007	-.001	0	-.004	0	.001	0	0	-	-
	1956-57	.008	-.005	.011	.006	-.002	-.006	.001	0	0	0	.001	-	-	-
	1957-58	-.001	.011	-.003	-.002	0	.005	-.002	.005	-.001	0	-.001	-	-	-
	1958-59	.008	-.002	.014	.007	.004	.001	.002	-.003	.001	.001	0	-	-	-
	1959-60	.006	.014	.008	-.002	.008	0	-.001	0	-.001	0	0	-	-	-
	1960-61	.001	-.008	-.004	.012	0	.004	.003	0	.001	-.002	.001	-	-	-
	1961-62	.009	-.005	.002	-.004	.004	-.002	.003	.002	-.001	.002	0	-	-	-
	1962-63	-.010	.011	-.007	-.005	-.004	0	.001	-.001	.001	-.001	-.001	-	-	-
	1963-64	.018	-.002	.006	.018	0	.002	.001	.003	.001	0	.001	-	-	-
	1964-65	-.018	.013	.003	-.004	.006	-.001	-.006	0	0	-.001	0	-	-	-
40-44	1954-55	.001	0	.004	-.001	0	-.001	0	0	0	0	0	-	-	-
	1955-56	-.002	.008	-.004	.002	-.002	.001	-	-	-	-	-	-	-	-
	1956-57	.019	-.004	.002	0	0	-.001	-	-	-	-	-	-	-	-
	1957-58	-.018	0	.002	.001	0	0	-	-	-	-	-	-	-	-
	1958-59	.014	-.004	-.003	.003	.001	0	-	-	-	-	-	-	-	-
	1959-60	-.002	.010	-.001	-.002	.001	0	-	-	-	-	-	-	-	-
	1960-61	.016	0	.004	0	.002	-.001	-	-	-	-	-	-	-	-
	1961-62	-.001	.005	0	.002	-.002	.001	-	-	-	-	-	-	-	-
	1962-63	-.018	0	-.003	-.001	-.001	.001	-	-	-	-	-	-	-	-
	1963-64	.006	.012	.006	.002	.004	-.002	-	-	-	-	-	-	-	-
	1964-65	-.004	-.007	0	0	-.002	.003	-	-	-	-	-	-	-	-

Table C32. Count of minus signs appearing in Table C31, for all durations 10 years or less only

Period	Age at marriage				
	Under 20	20-24	25-29	30-34	35-39
1954-55	7	7	5	3	4
1955-56	2	3	4	4	5
1956-57	2	1	1	4	3
1957-58	3	1	3	2	6
1958-59	3	1	1	4	2
1959-60	5	2	3	3	3
1960-61	2	1	1	1	3
1961-62	5	3	4	3	4
1962-63	0	4	10	6	7
1963-64	10	0	0	1	1
1964-65	6	7	3	3	5

There is a marked irregularity in these counts of minus signs in 1961-2 to 1963-4 which makes it very hard to decide if the most recent figures do hint at any change of trend, but there only seems to be the slightest suggestion of a rise in the number of minus signs for the groups marrying at ages under 30 and none at all for the two older marriage age-groups.

Remembering that the fertility rates by current age and duration of marriage, which are for a slightly later period and which do show a clear fall in total, indicated that the fall was concentrated at durations over 5 years it may be worth while sub-dividing the counts of minus signs shown in Table C31 for durations up to five years and those for durations of six to ten years. This is done for marriage ages under 30 in Table C33.

Table C33. Count of minus signs appearing in Table C31

Period	Duration 5 years or less			Duration 6 years - 10 years		
	Age of marriage					
	Under 20	20-24	25-29	Under 20	20-24	25-29
1954-55	5	3	2	2	4	3
1955-56	2	2	2	0	1	2
1956-57	2	1	1	0	0	0
1957-58	2	0	1	1	1	2
1958-59	1	0	0	2	1	1
1959-60	2	1	1	3	1	2
1960-61	1	0	0	1	1	1
1961-62	1	0	0	4	3	4
1962-63	0	2	6	0	2	4
1963-64	5	0	0	5	0	0
1964-65	3	4	2	3	3	1

Here the suggestion of a downturn (indicated by a rise in the count of minus signs) is no firmer at durations over 5 years than at shorter durations. For what it is worth this differs from the finding from fertility rates by current age and duration of marriage. But the statistical ice is very thin indeed; more years of data are needed.

This leaves the third block of detailed data where family size achieved so far is an additional axis of classification.

Fertility rates by marriage age, year of marriage and size of family

These data are similar to the previous block - indeed they are a subdivision of it - in that they are lagged behind the fertility rates by current age and therefore do not show any clear fall even in total.

With these data it is difficult to present a summary picture. The previous two sections contained, fundamentally, a line of figures for each year of occurrences, but here we have a set of figures for each year of occurrence. Although the method offends against the rule of considering fertility on a cohort basis the best solution seems to be to add vertically the rates shown in Appendix A to this volume. This is a method suggested by Ford and Stewart* and is convenient in spite of the theoretical objection. The results are in Table C34 and are shown graphically in diagrams 3 (a) - (d).

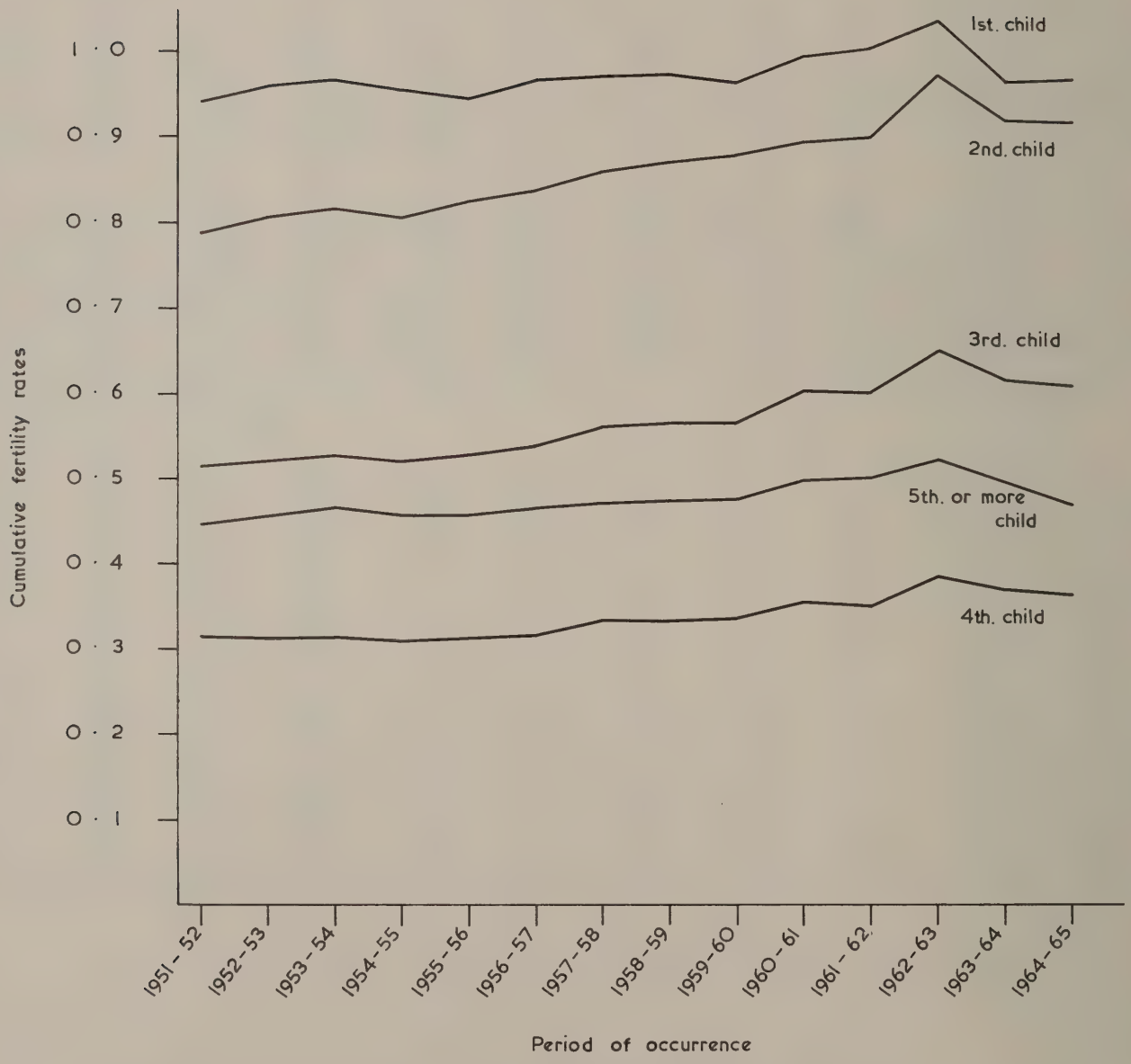
Journal of Institute of Actuaries Student Society, Volume 16, No. 4, 1961.

Table C34. Total for all marriage durations of fertility rates per 1,000 women married once only, England and Wales

Period of occurrence	Mother's age at marriage and child's position in family									
	Under 20					20–24				
	1	2	3	4	5 or more	1	2	3	4	5 or more
1951–52	.940	.788	.513	.314	.446	.842	.637	.325	.159	.169
1952–53	.958	.805	.520	.311	.455	.843	.640	.323	.158	.166
1953–54	.967	.816	.526	.313	.465	.842	.648	.326	.159	.169
1954–55	.952	.805	.519	.309	.456	.837	.643	.324	.156	.167
1955–56	.944	.823	.528	.313	.456	.852	.654	.327	.154	.165
1956–57	.962	.837	.537	.316	.464	.882	.677	.339	.163	.172
1957–58	.969	.858	.560	.333	.470	.906	.702	.349	.169	.175
1958–59	.971	.870	.564	.332	.472	.910	.725	.364	.172	.176
1959–60	.961	.878	.564	.336	.474	.905	.743	.376	.178	.183
1960–61	.991	.892	.602	.355	.498	.925	.780	.400	.186	.188
1961–62	1.001	.897	.600	.351	.500	.935	.789	.412	.192	.196
1962–63	1.033	.970	.648	.383	.521	.928	.794	.420	.195	.192
1963–64	.961	.916	.614	.369	.495	.949	.833	.437	.205	.200
1964–65	.964	.915	.607	.363	.467	.938	.838	.445	.203	.192
	25–29					30–34				
1951–52	.775	.531	.233	.100	.084	.645	.373	.142	.055	.039
1952–53	.780	.550	.241	.105	.087	.654	.384	.149	.058	.038
1953–54	.780	.559	.246	.104	.087	.651	.386	.148	.059	.039
1954–55	.781	.553	.244	.102	.086	.656	.388	.151	.061	.040
1955–56	.811	.561	.246	.103	.085	.665	.393	.153	.059	.040
1956–57	.849	.585	.252	.111	.087	.700	.389	.152	.062	.039
1957–58	.866	.601	.263	.109	.091	.696	.417	.163	.063	.045
1958–59	.880	.631	.279	.118	.095	.702	.418	.166	.063	.044
1959–60	.879	.649	.290	.119	.100	.717	.425	.174	.065	.052
1960–61	.897	.694	.320	.130	.107	.715	.453	.184	.079	.054
1961–62	.902	.696	.331	.144	.114	.708	.463	.194	.084	.066
1962–63	.840	.684	.320	.138	.117	.675	.461	.197	.088	.071
1963–64	.872	.717	.355	.157	.128	.708	.492	.215	.092	.084
1964–65	.865	.726	.363	.157	.134	.689	.499	.224	.094	.086

Diagram 3 a

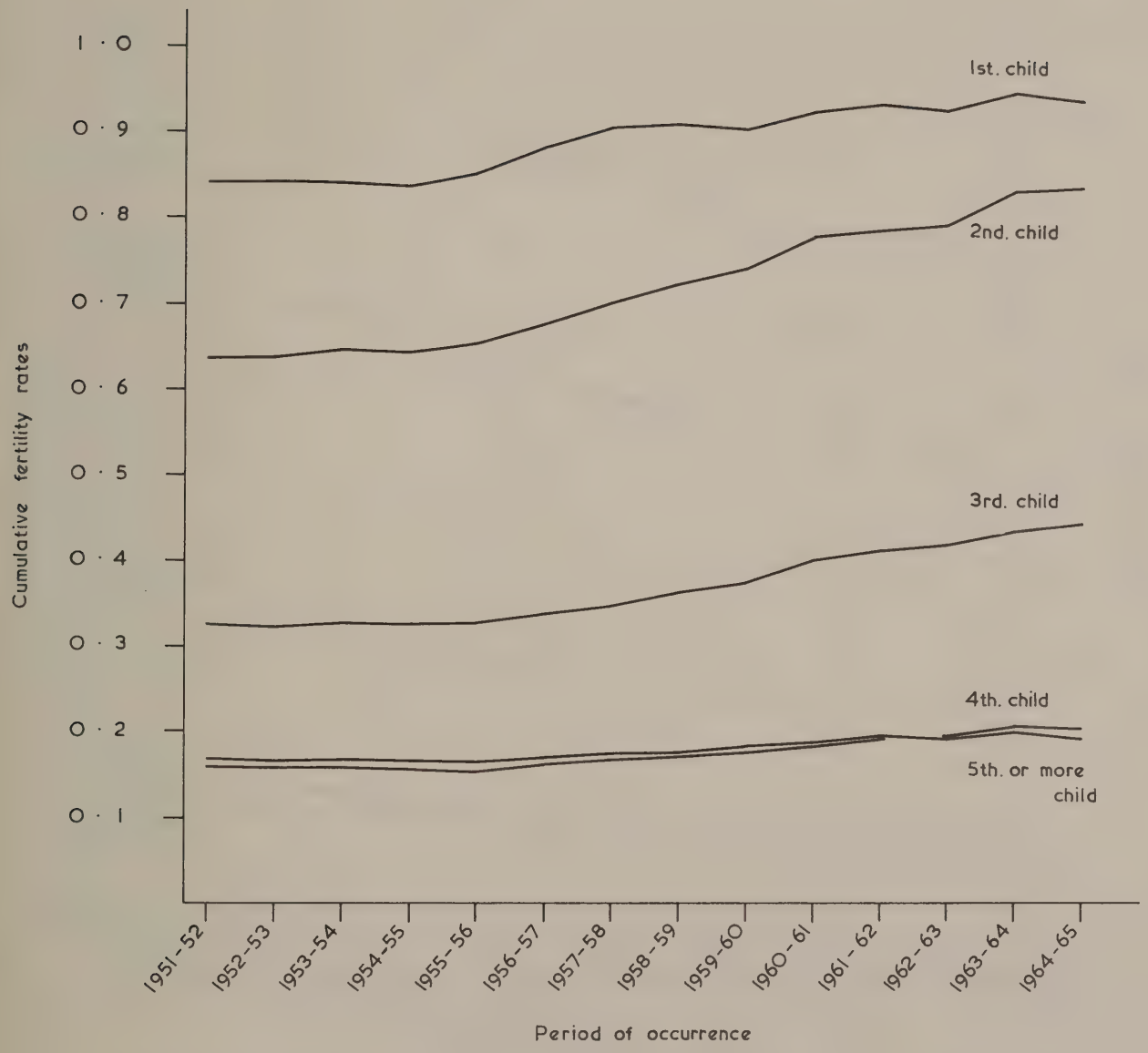
Marriage age under 20 years



Total for all marriage durations of fertility rates per 1,000 women married once only, 1951 to 1965, England and Wales

Diagram 3 b

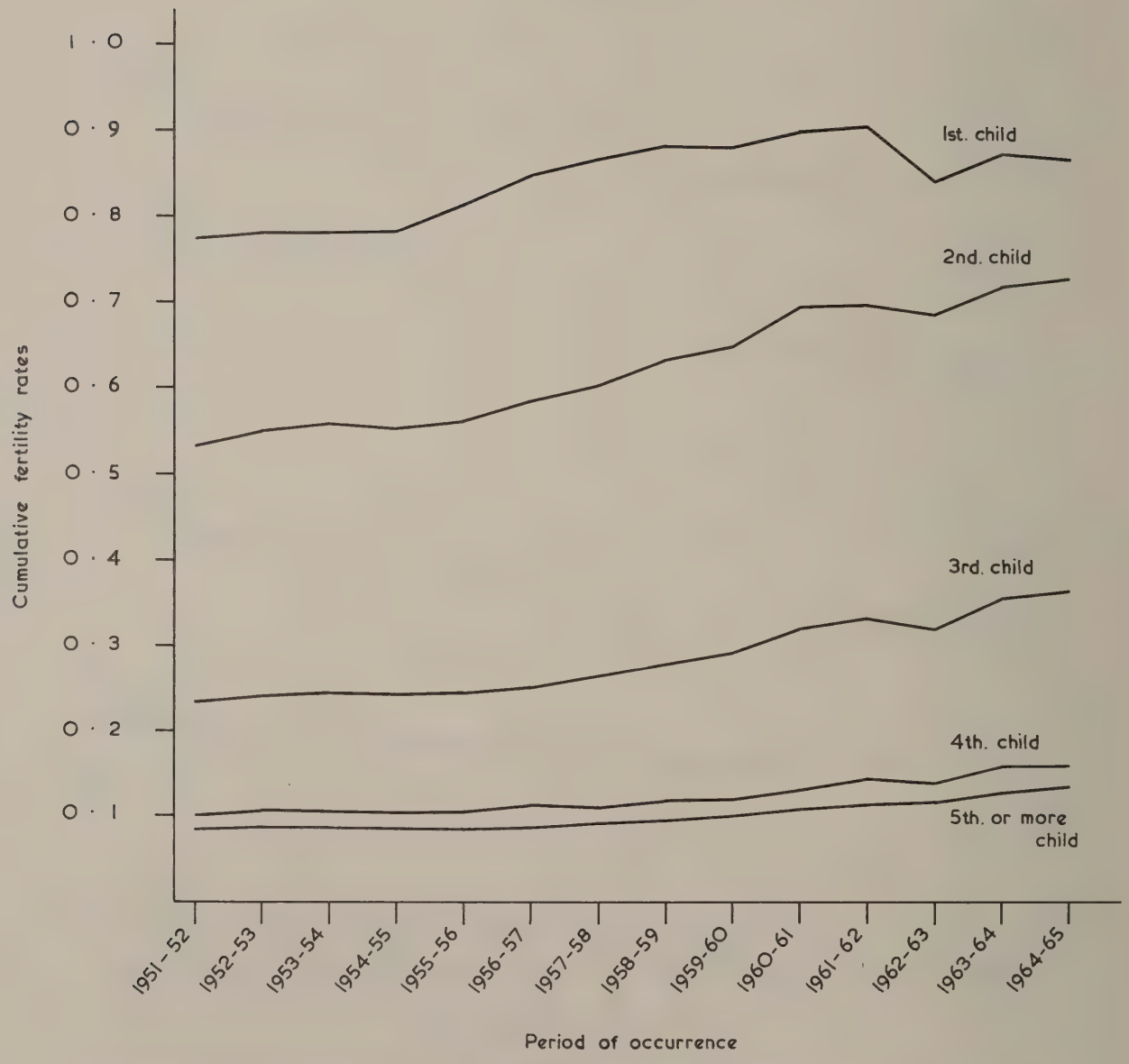
Marriage age 20 to 24 years



Total for all marriage durations of fertility rates per 1,000 women married once only, 1951 to 1965, England and Wales

Diagram 3 c

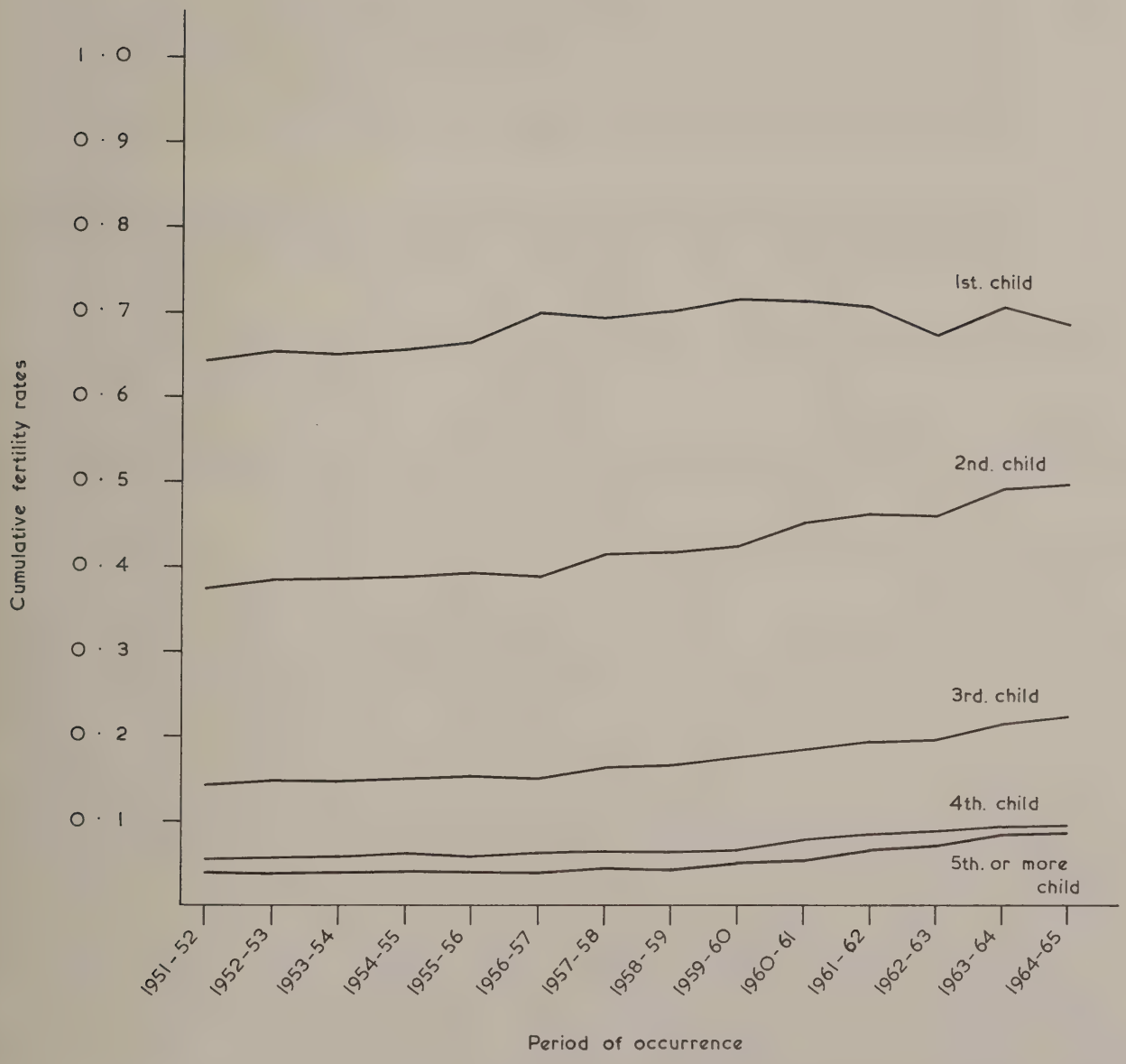
Marriage age 25 to 29 years



Total for all marriage durations of fertility rates per 1,000 women married once only, 1951 to 1965, England and Wales

Diagram 3 d

Marriage age 30 to 34 years



Total for all marriage durations of fertility rates per 1,000 women married once only, 1951 to 1965, England and Wales

Here, as with the fertility rates by age at marriage and year of marriage, there are some irregularities between 1961-62 and 1963-64, especially in the rates for women who married aged under 20, and the statistical ice is very thin indeed. Nevertheless a few features do emerge from considering the figures and the diagrams.

(1) There seems to have been some downturn in the latest year for fifth or higher order children born to women who married aged under 20; lower birth orders for this marriage age-group merely levelled off.

(2) A similar thing appeared a year or two earlier amongst the women who married aged 20-24, signalled by the fact that the total rate for fifth or higher order children fell below the total rate for fourth children between 1961-62 and 1962-63. For this age at marriage group, however, the total rates for lower birth orders show little sign of levelling off yet.

(3) Apart from an apparent fall in the total rate for first children there are few signs of changes of trend amongst the women who married aged 25-29 and 30-34.

There is a hint, therefore, that the fall in fertility rates in 1965 may have been to some extent concentrated in fifth or higher order children.

"True birth order rates" - that is probabilities that a woman with n children will bear an (n + 1)th child in a twelve month period - are at present being calculated and may throw some further light on current trends when they become available.

Summary on legitimate fertility

The tentative conclusion of this section of the report is, therefore, that the decline in fertility rates in 1965 was concentrated among women who married at ages under 30, was not concentrated in any marriage duration among women who married aged under 20, was concentrated at durations of over 5 years among women who married aged 20-29 and may have been slightly concentrated at fifth or higher order children.

This fits in quite well with the hypothesis underlying the explanation suggested for the longer-term past trend, that people's motivations about family size only harden up, so to speak, after some years of the experience of parenthood. A change of trend would therefore be expected to appear first at relatively high durations and parities.

It may be relevant to note that in 1963 the Government accepted in principle the *Robbins Report on Higher Education* which recommended a great extension of education beyond the age of 18 and that in 1964 the Government announced its decision to raise the compulsory school-leaving age to 16 in 1971. These may have exerted some influence on parents who had already experienced for some years the emotional and economic costs of parenthood as well as its joys.

The availability of so convenient and effective a contraceptive method as 'the pill' might have made it easier for parents to respond to that influence by refraining from having fifth or higher order children.

That suggestion however, does not explain the more general downturn, or at least the levelling off, in fertility rates for women who married aged under 20, even at durations under 5 years and for parities one to four. It could be that younger women (aged under 25 even after 5 years of marriage) more readily adopt the most modern contraceptive methods.

It should be repeated that all of this analysis is extremely tentative and will be reviewed as data for later years become available.

The whole of the analysis was in terms of legitimate fertility rates, ignoring illegitimate births which should, however, be considered also.

Illegitimate births

On pages 63 to 68 of the Commentary in the *Registrar General's Statistical Review* for 1964 there was a discussion of illegitimate fertility rates which concluded that the illegitimacy rate was highest among women aged 20-29 and that it had been rising rapidly. Did the rapid increase continue in 1965?

The answer is "Yes". Although legitimate births fell by $1\frac{1}{2}$ per cent, between 1964 and 1965, illegitimate births rose by nearly $4\frac{1}{2}$ per cent.

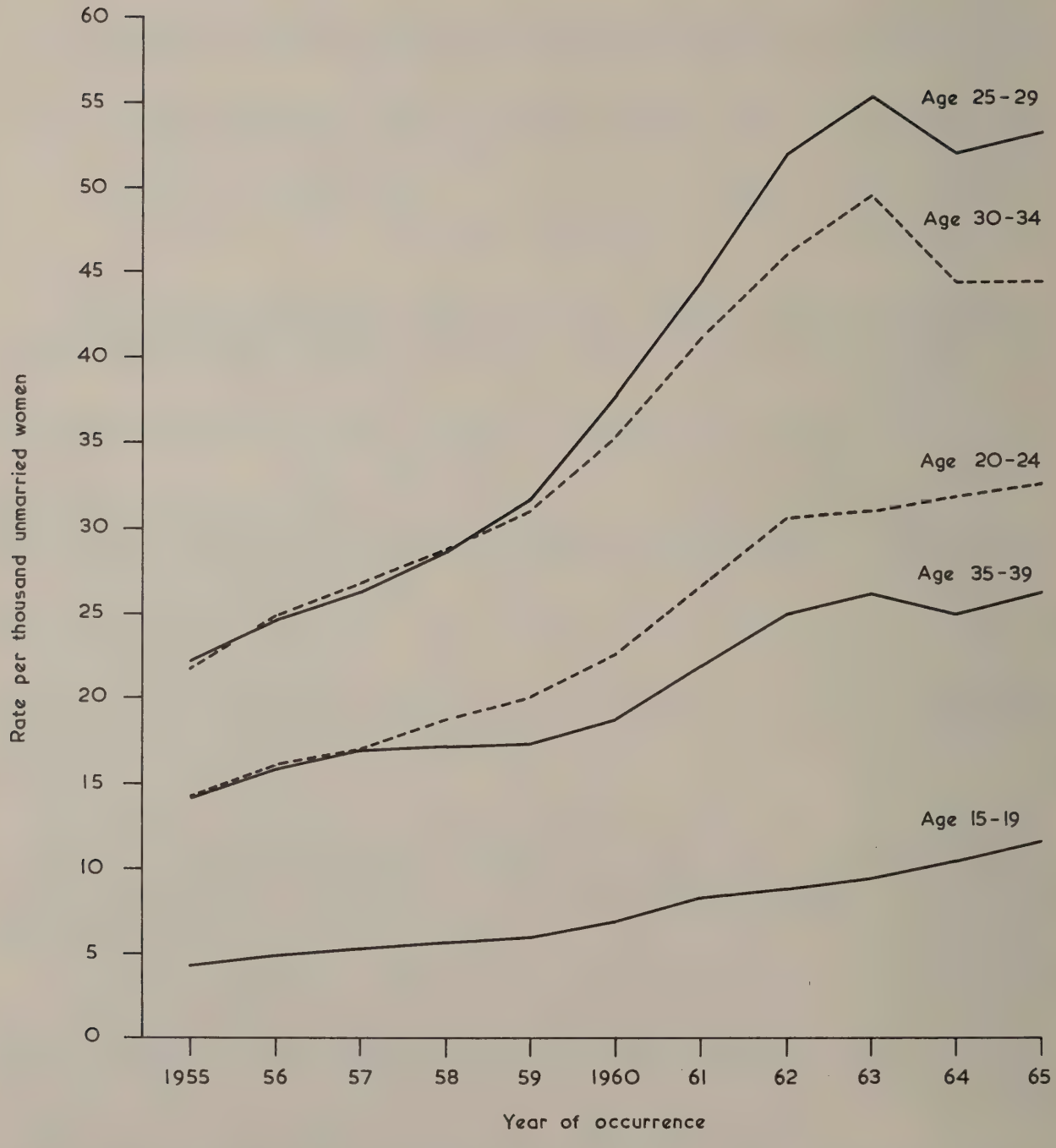
It was pointed out on page 64 of Part III of the *Registrar General's Statistical Review* for 1964 that the conventional use of the single, widowed and divorced population of women as the appropriate denominator for illegitimate births can be misleading. This was because it appeared that in 1961 nearly 30 per cent of illegitimate births might have been to married women. An obvious consequence of this as that the rates shown in Table EE (a) of Part II of the *Review* cannot be taken as reliable indicators of the *level* of illegitimacy rates. For that reason on pages 64-68 of Part III of the *Review* for 1964 the rates given in Table EE of Part II of the *Review* were adjusted before considering the levels of illegitimacy rates.

The present discussion is not so much about the level as about the trend of illegitimacy rates and it might be hoped that here the fact that nearly a third of illegitimate births may have occurred to married women in 1961 would not matter. There is, however, the possibility that this proportion itself has been changing over time and so distorting the trend shown by the rates given in Table EE. It will not be possible to assess this until a similar exercise to the one carried out using the 1961 census forms and birth certificates has been carried out. In the meantime the rates shown in Table EE of the *Statistical Review* can be used.

Diagram 4 shows the rates given in Table EE of successive Parts II of the *Review* from 1955 to 1965 for single, widowed and divorced women aged between 15 and 40.

There is a clear suggestion on this diagram that the increase in illegitimacy rates has slowed down considerably or even stopped since about 1962 except for the two youngest age-groups. If there has been since 1961 a fall in the proportion of illegitimate births which occur to married women, this slowing down or stopping of the rise in apparent illegitimacy rates could be spurious, but there is no evidence

Diagram 4



Illegitimate births per 1,000 single, widowed and divorced women, 1955 to 1965, England and Wales

for that. Since the youngest age-group (single, widowed and divorced women aged under 20) makes up nearly half of the whole population of single, widowed and divorced women aged 15-49 the continued increase in the apparent illegitimacy rate for that group means that the crude rate for the whole population shows very little sign of slowing down.

The fact that the apparent illegitimacy rates for women aged 20 or over do appear to have reached a turning point at about the same time as, or perhaps a year or two earlier than, the legitimate fertility rates may be a coincidence and arise from some quite separate cause, but it would be scientifically simpler, and therefore more satisfactory, if both trend changes could be explained by a single cause. To this extent some doubt is cast on the suggestion made in the discussion of legitimate fertility rates that prospective changes in compulsory education played a significant part in changing the trend of fertility. On the other hand within the realm of legitimate fertility rates the change of trend was most marked at relatively long durations and relatively high parities and these groups are demographically the furthest removed of the married population from the single, widowed and divorced. If a single cause were operating to produce a change of trend in both illegitimate and legitimate fertility rates one would expect to find the change of trend most marked for short durations and low parities and not the other way round.

This brief description of recent trends in illegitimate fertility rates cannot pretend to explain the phenomenon, but only to point in directions in which explanations might be found.

The next chapter presents the results of a special study carried out in the General Register Office of what legal statuses are gained by illegitimate children.

GENERATION STUDY OF ILLEGITIMATE CHILDREN

Illegitimacy is a legally defined status but this legal definition (like any other) is only a formal version of categorisations that are generally socially accepted now or at various past periods. It is perfectly possible for the *de facto* categorisations to change while the legal definitions remain constant. There are some sectors of society where the fact that a person's parents are not married to each other and the legal status of illegitimacy carry no negative or positive values. That is not generally true, however; both the social category and the legal status generally carry harmful consequences.

To investigate the social categories would call for techniques of interview surveys but it is possible to study the legal statuses by means of existing records and even this limited field of study is valuable. It can show, for example, to what extent illegitimacy (the legal status) is ended by adoption, to what extent it is ended by legitimation and to what extent it survives into adulthood.

This section of the report describes a special study carried out in the last few years. It begins with a brief description of the law of illegitimacy, legitimation and adoption. There follows a description of the methods by which the study was carried out. The fourteen tables of results are followed by a brief commentary.

The legal position

An illegitimate child is one whose mother is not married or who is married but not to the putative father of the child. The entry in the birth register gives *prima facie* evidence to any court in which the question of the legitimacy of the child may arise but other evidence may outweigh it.

The illegitimacy of the child is shown in the birth register by the absence of any father's name or, if a father's name is on the birth entry by the fact that the birth entry is made on the joint information of both parents. This is apparent on the original entry and on a full birth certificate but not on a short birth certificate.

The legal status of illegitimacy can be ended by:-

(1) Adoption

(2) Legitimation by the subsequent marriage of the natural parents. The child is legitimated by the marriage but the General Register Office does not know of the legitimation until application is made for the birth to be re-registered which may take place years later or not at all. If the

child's mother subsequently marries a man who is not the child's father the child is not thereby legitimated; he can, of course, be adopted by the mother and her husband.

(3) Death

Adoption is controlled by:-

(a) *The Adoption of Children Act, 1926*

(b) *The Adoption of Children Act, 1949*

(The law relating to adoption was consolidated in the *Adoption Act, 1950.*)

(c) *The Adoption Act, 1958*

(d) *The Adoption Act, 1960* which arose out of the *Legitimacy Act, 1959* and made it possible to revoke an Adoption Order for a child who had been adopted by the natural parents when they married one another after the birth and who subsequently became legitimated by the operation of the *Legitimacy Act, 1959.* When an Adoption Order is made, a copy of it is sent to the General Register Office and an entry recording the adoption is made in the Adopted Children Register. A full certificate from that entry can be used as evidence of birth and adoption and a short certificate, which is indistinguishable from any other short birth certificate, can also be obtained and used for most ordinary purposes.

Legitimation by the law of England and Wales takes place under:-

(a) *The Legitimacy Act, 1926* by which legitimation first became possible provided that neither of the child's natural parents had been married to a third person at the time of the child's birth. This Act contained a schedule providing for the re-registration of the birth which was incorporated in section 14 of the *Birth and Death Registration Act, 1953.*

(b) *The Legitimacy Act, 1959* which removed the bar to legitimation by marriage if the natural parents had not been free to marry at the time of the birth. When a legitimated birth is re-registered - and not until an application is made for re-registration does the General Register Office know of the legitimation - the new birth entry is indistinguishable from an entry which was legitimate from the beginning but was registered after the end of the permitted statutory period.

Method of the study

The aim of the study was to assess the relative importance of events which change the legal status of illegitimate children, to assess to what extent any such changes are made and whether there have been alterations in the relative importance of the different methods of changing the child's illegitimate status during the period since 1926.

The forms of decrement which apply to the population of illegitimate births are:-

(i) death

(ii) legitimation

(iii) adoption - by parent(s)
- by other relative(s)
- by someone else

Those who are not subject to these events remain illegitimate. The effect of migration has been ignored for this exercise.

Information required

Ideally, for each year since 1926 the following information was needed:-

Illegitimate births

Deaths of illegitimate children by sex and year of birth.

Legitimations by sex and year of birth of child at legitimation. (A less satisfactory approach would have been to classify such children by their age at re-registration rather than their age at legitimation.)

Adoptions by sex and year of birth of child classified by the relationship of the adopter to the adopted child.

Source of data

Illegitimate births. The numbers of illegitimate births are published for every year in Table B of Part II of the *Statistical Review.*

Deaths. There were no figures available for deaths of illegitimate children after those in the first year of life shown in Part I of the *Statistical Review.* As deaths of young children are concentrated in the very early period of life, it was decided to ignore any differential mortality between legitimate and illegitimate children after the first year of life. This assumption was confirmed by having the deaths of children at each year of age from 0 to 14 in 1963 tabulated separately for legitimate and illegitimate children. The differences in mortality rates were negligible.

As death is not of great magnitude or importance in the present exercise the ordinary life table death rates were used to obtain the deaths to be applied to the generations of illegitimate children after the first year of life. This is bound to impart a certain amount of marginal error into the figures but this is unlikely to be of any significance to the main object of the study.

Adoptions. These are shown by type of adopter and by sex and age of the child in Part II of the *Statistical Review.* This table has appeared since 1950.

In this exercise it is necessary to identify single years of age and then to relate the adoptions to the correct birth generations. It was therefore necessary to split the grouped years of age shown in the published tables into single years of age.

It was arranged that for 1959 and later years figures of adoptions were obtained by single year of age at adoption and these figures were used to split the figures for years between 1950 and 1959. There is every reason to assume that the distribution by age at adoption within five year age-groups would not have changed.

The figures of adoptions by single years of age obtained in this way needed still further sub-division when they fell in the boundary between two of the generations specified in this study. The sub-division was made using an interpolation formula as shown in Diagram 5.

The published tables of adoptions that took place before 1950 are not in a form suitable for use in this study, mainly because there is no information available on the relationship of the adopter. The large increase in the number of adoptions during the war meant that an unchanged proportional distribution of relationships could not be assumed between 1927 and 1950. Supplementary information was therefore needed which took the form of a random or quasi-random sample of the adoptions registered between 1927 and 1950. The sampling fraction was limited to 1 in 10 on the assumption that the pattern would not have changed fundamentally from its present shape of a marked concentration in two groups (adoptions where there is no stated relationship and those where there are two adopters one of them being the mother of the child). The fact that the main interest is not in figures by single years of age but in the proportion adopted by the time certain significant birthdays are reached also contributes to justifying a sampling fraction as low as 1 in 10.

A further difficulty arose in obtaining the information on relationship from the pre-1950 material. Adoption orders made by Juvenile Courts before 1950 do not contain a formal statement of the relationship between the adopters and the adopted child. Those orders give the names of the parents of the child and conventional rules enable a relationship coding in the "parent"/"non-parent" form to be made. Unfortunately orders made in County Courts do not even give the name of the parents of the adopted child - all that does appear is the number of the appropriate entry in the birth register. For County Court cases it was necessary first to trace the birth entry and extract from it the name of the parents and then apply the conventional rules for relationship coding.

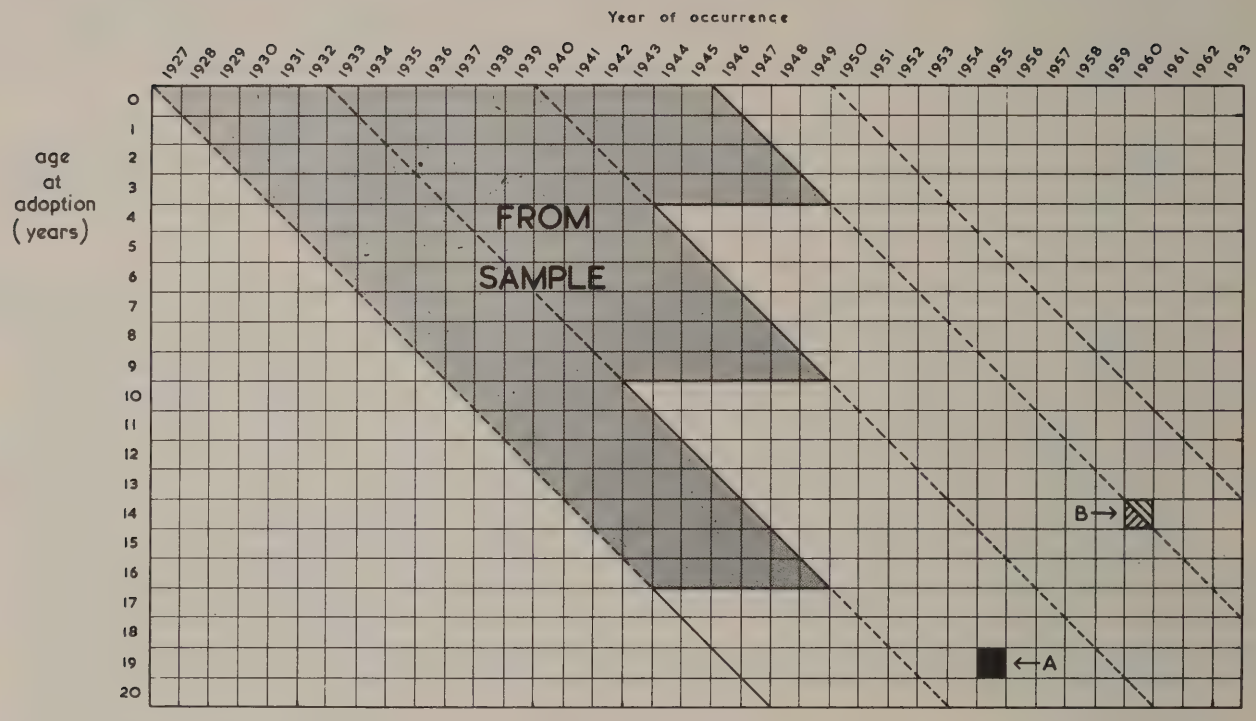
The conventional rules were:-

(a) If it is stated that the child is a child of one of the applicants - code as "parent".

(b) If a completely identical name (taking account of any former surname) for adopter and parent occurs in the respective court order and birth record, then code as "parent".

(c) If the forename(s) of mother and adopter are identical in the court order and birth record, then code as "parent".

Diagram 5



Data for whole cells (A) are obtained from Table T5 (Stat.Review Pt.II)

Data for split cells (B) obtained by division of the above data by the following formulae (where A_x represents the number of adoptions in the year at age x):

	Age 0	Ages 1 to 19	Age 20
◹ =	$\frac{3A_0}{4}$.	$\frac{A_x}{2} - \frac{A_{(x+1)} - A_{(x-1)}}{24}$.	$\frac{A_{20}}{2}$.
◺ =	$\frac{A_0}{4}$.	$\frac{A_x}{2} + \frac{A_{(x+1)} - A_{(x-1)}}{24}$.	$\frac{A_{20}}{2}$.

Method of relating adoptions to successive generations

(d) If the surname of adopter on the court order is identical to that for the parent on the birth record, but the forename(s) differ in any way, then code as "non-parent".

(e) All other cases - code as "non-parent".

Children born abroad and adopted in England and Wales. This group constitute a small problem as they are adopted in England and Wales and included in the adoption statistics but are not included in the starting populations of illegitimate births to which the adoptions will be related.

Legitimations. The only published information on this topic is that in Part II of the *Statistical Review* which shows the numbers of births which have been re-registered as legitimate by calendar quarter and year for each year since 1927. There is no indication of the age of these children when the re-registration took place, or the date at which the child was in fact legitimated by the marriage of the parents as opposed to the date when the birth was actually re-registered.

While figures of re-registration would not have been useless for this study it was clearly preferable to have the figures by age at actual legitimation, i.e. the date at which the parents married or, in the case of parents married before the operation of the *Legitimacy Act, 1959* who were not free to marry when the child was born, the date of operation of that Act, the 29th October 1959. The *Legitimacy Act, 1926* places a duty on parents who legitimate their children to furnish information to the Registrar General with a view to obtaining the re-registration of the birth within three months of the date of the marriage. However, figures of either re-registration or legitimations obtained from the re-registration material cannot be complete as the only children included are those where the parents not only legitimate the child by their marriage but actually take steps to effect the re-registration of the birth. The unknown proportion who fail to take this latter step are excluded from these figures and to that extent the legitimated will be understated and those still illegitimate overstated. Some discussion of the possible amount of error appears on page 84.

Every re-registration under the *Legitimacy Acts* is recorded on a card and the pack of these cards was the sampling frame for re-registrations of legitimations. For the same broad reasons as justified a one in ten sample of adoptions a systematic one in ten sample of these cards was selected.

The cards themselves however do not contain all the information needed to determine the age of the child at legitimation as well as its year of birth and it was necessary to use the sampled card as a signpost to the relevant individual file from which the full information was extracted.

Processing of information

This study is limited to the adoptions which had occurred and the legitimations which had been re-registered by the end of 1963. This means that the experience of the last generation is incomplete in this study; for example the illegitimate children born in 1963 have only 1 year of potential legitimation experience included. It is largely for this reason that the percentage of the 1959-1963 generation which had been legitimated by their fourth birthday is lower than for the preceding generation (see page 84).

In order to relate events - adoptions, legitimations or deaths - to the appropriate illegitimate births, figures by age and calendar year of occurrence were adjusted to show age at occurrence by calendar year of birth. As already indicated in the section on adoptions this involved working in single years of age and single calendar years of occurrence throughout the processing stages.

With the data in the form described above it was possible to take the illegitimate births in a given year or period of years and tabulate the number of such children who experienced the events listed above according to the age of the child when the event occurred. The information at this stage was in the form of Table C35 which shows the numbers of events occurring to a generation of illegitimate children born in a given year.

Single years of birth would have given unreliable figures because of fluctuations particularly in the sample data. They were therefore grouped into generations of roughly five years. The particular generations used for this study were chosen for the following reasons:-

1959-1963	The latest years available at the time
1955-1959, 1950-1954	Standard quinquennia
1945-1949	"Residual" years between the war and 1950
1940-1945	War years
1933-1939	"Residual" years between the first possible quinquennium and the war
1927-1932	The first possible quinquennium of adoption and legitimation

Construction of Tables C36(A)-(O)

Table C35 shows in a convenient arrangement the mortality and actual numbers of adoptions and legitimations experienced by a generation of 88,248 children (illegitimate male children born in the years 1927-1932). Tables C36(A)-(O) is related to a convenient 10,000 births in order that each generation analysis may be comparable with one another.

In compiling Tables C36(A)-(O) the numbers in columns (3), (5), (7) and (9) of Table C35 are transferred to columns (f), (g), (h) and (j) of Tables C36(A)-(O).

From here on Tables C36(A)-(O) becomes an exercise in following through the many changes of status.

Table C35. Generation arrangement of events occurring to illegitimate male children born in the years 1927 to 1932, classified by age of occurrence of event

Related illegitimate male births = 88,248

Age at occurrence of event	Mortality		Adoption by				Legitimation	
			Parent		Other			
	rate per person	Number expected from 10,000 births	Actual number	Number related to 10,000 births	Actual number	Number related to 10,000 births	Actual number	Number related to 10,000 births
1	2	3	4	5	6	7	8	9
0	.12519	1,252	20	2	1,290	146	4,120	467
1	.02212	194	30	3	1,120	127	1,000	113
2	.00768	66	50	6	640	73	700	79
3	.00409	35	90	10	530	60	470	53
4	.00321	27	100	11	490	56	390	44
5	.00291	25	90	10	560	63	210	24
6	.00214	18	120	14	200	23	60	7
7	.00172	14	110	12	170	19	110	12
8	.00140	12	130	15	220	25	70	8
9	.00119	10	70	8	90	10	50	6
10	.00104	9	200	23	230	26	50	6
11	.00096	8	200	23	150	17	60	7
12	.00092	8	200	23	150	17	50	6
13	.00094	8	290	33	210	24	40	5
14	.00101	8	420	48	300	34	40	5
15	.00110	9	160	18	120	14	20	2
16	.00119	10	150	17	110	12	-	-
17	.00125	10	98	11	39	4	-	-
18	.00133	11	61	7	37	4	20	2
19	.00139	11	66	7	40	5	-	-
20	.00140	12	61	7	44	5	10	1

The working formulae may be summarised as follows:-

Where letters symbolise columns of Tables C36(A)-(O) and the suffix represents each age in years:-

Step 1 $\frac{f_o}{a_o} = q_o$ (or, the mortality rate from Table C35 in fact)

Step 2 Multiply q_o by figures in columns (b), (c) and (d), so

$$q_o b_o = k_o$$
$$q_o c_o = l_o$$
$$q_o d_o = m_o$$

Step 3 $f_o - (k_o + l_o + m_o) = n_o$

Step 4 $b_o + g_o - k_o = b_1$

Step 5 $c_o + h_o - l_o = c_1$

Step 6 $d_o + j_o - m_o = d_1$

Step 7 $a_1 - b_1 + c_1 + d_1 = e_1$

Repeat Steps 1-7 for successive ages.

The mortality at any age is removed from surviving children before the other events (adoptions etc.) are made to occur. No allowance is made for death between the occurrence of the event (adoptions etc.) and their next birthday.

It was found that more precise working did not significantly improve the results obtained by the above method.

Finally, one further assumption was used throughout the study. In the absence of information it was considered reasonable to assume that the survivors shown in columns (b) to (e) could experience the same mortality and that one would not expect any appreciable difference to the mortality of adopted children and unadopted children.

To summarise:-

Column (a) shows the number who survive to an exact age out of 10,000 births.

Columns (b) to (e) show the status attained by the survivors at each age.

Column (f) - show the numbers of adoptions, legitimations and deaths (by status) which are estimated to have occurred to these children between each birthday up to their twenty-first birthday.

Discussion of results

The set of 14 tables present the full results of this study for seven birth generations and for the two sexes. The full history of the more recent generations is not available so that the tables for them are curtailed. It is intended to complete these tables, to keep fresh generations up to date as a routine and to present the results from time to time in the *Statistical Review of England and Wales.*

In considering the tables it is essential to bear in mind that the figures relating to adoptions of children by parents include two substantially different types of adoptions. One is the adoption of a child by both parents - an event which cannot normally take place until they are married to each other - the other is the adoption of a child by one parent, more commonly the mother, and a spouse not the natural parent of the child. Adoption by a single parent is also possible but is much more rare.

The most recent generation for whom information about the pattern of legitimation or adoption over the whole period of childhood is available is the generation born 1946-1949 although, because of the effect of the "Marriage bar" which was finally removed by the *Legitimacy Act 1959,* the experience of this generation will not be repeated by later generations.

Adoptions

In the generation born during 1946-1949 the rate of adoption by a parent or parents increased to a peak at the age of five and then declined slowly. On the other hand, the rate of adoption by other persons starts from a peak at age 0 and declined steadily from then on. The initial small number of adoption by parents is primarily due to the fact that adoption does not take place until the marriage of the parent or parents. The contrast also possibly reflects the different circumstances in which the children are living. Where a child is living with one or both of his parents from birth, there will be a natural tendency for the parent or parents to seek to regularise the position of the child in some way as he grows older, and preferably before he makes his first important contact with the outside world on starting school. It is of interest that the rate of adoption by a parent or parents in these generations shows a significant fall at age 13, followed by a recovery and resumption of the gradual decline from age 14. Why adoptions should fall off at this age is not yet clear.

Legitimation

The rate of legitimation is low in the first month or two of the lives of the children but rapidly reaches a peak so that, as the table shows, the highest rate of legitimation is in the first year and it declines very rapidly thereafter. The table shows a high level at ages 10-13. This high level is almost certainly due to the operation of the 1959 Act which removed the "marriage bar" and merely reflects the ages at the date of the removal of the "bar" of the children who had been subject to it. It is possible also that such circumstances as the entry into secondary schools create a secondary stimulus for parents who are in a position to marry and legitimate their children to do so at certain important stages of the child's life.

If we look at the generation born 1933-1939 there is no sub-peak of legitimation among girls in the early teens although there is a slight rise at age 13 for boys possibly associated with entry into employment and National Insurance, and another for both sexes at ages 19 and 20 which is probably due to the effect of the 1959 Act on the last born children of this generation.

The time pattern of the re-registration of legitimation over a child's life suggests that by the time the children are 16 or 17 years of age, when most of them will therefore have entered the national insurance scheme, nearly all those who have been legitimated by their parent's marriage will have had their births re-registered. If this is right the error, mentioned on page 79, introduced into this analysis by the failure of parents of legitimated children to re-register the birth would mainly have been eliminated by the age of 17.

It is clear from inspection of the tables that the rate at which adoption or legitimation takes place falls off very rapidly after the first few years of life. Approximate comparisons of the experience of successive generations can therefore be made by considering the position reached after quite a small number of years. In interpreting this comparison it is necessary to bear in mind the existence of the "marriage bar" throughout the period from 1927-1959. The percentage of children legitimated within the first 4 years is not necessarily the same as that of children living in a more or less normal family with two married parents.

By limiting the following summary tables to the first six generations the comparison can be carried out in terms of the position reached after four years; the experience of the 1959-1963 generation is too limited to be of any use for comparisons at a higher age than one year.

Generation Born illegitimate in	Percentage of those surviving after 4 years who were:						Average Annual Illegitimate Births thousands
	Adopted		Legitimated		Still Illegitimate		
	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	TOTAL
1927-1932	5	7	8	7	87	86	29
1933-1939	10	14	9	8	81	78	26
1940-1945	20	14	6	6	74	80	43
1946-1949	22	23	5	5	73	73	45
1950-1954	21	22	6	6	73	72	33
1955-1959	23	23	8	8	69	69	35

Figures may not cast because of rounding

This table has been confined to generations born since 1927 because although some of the children born illegitimate in the four years immediately before the coming into operation of the Adoption and Legitimacy Acts would have either become automatically legitimated on the date of operation of the Legitimacy Act or might have been adopted very quickly afterwards, the numbers will inevitably have been less because of the absence of the facilities during the first years of the children's lives.

For all earlier generations, of course, the percentage of those living after four years who were adopted and legitimated by the age of 4 would have been 0 for both sexes and the percentage who were still illegitimate at that age would therefore be 100 for both sexes.

The effect of the *Adoption Act, 1926* and the *Legitimacy Act, 1926* was quickly apparent. About 13 or 14 per cent of the generation born in 1927-1932 had become adopted or legitimated by their fourth birthday; legitimation was slightly more frequent for boys but there was little difference between adoption and legitimation for girls.

Of the next generation examined - the illegitimate children born from 1933-1939 - about 20 per cent had been adopted or legitimated by their fourth birthday and by then, 10 to 15 years after the passage of the two Acts, substantially more children were adopted than legitimated. It is interesting to note that a smaller proportion of boys than girls were adopted.

Because of all the social conditions of wartime the following generation of illegitimate children was very much larger; on average 43 thousand illegitimate births occurred each year between 1940 and 1945 compared with 26 thousand a year between 1933 and 1939. The number of re-registrations of births of legitimated persons did not increase, except for a temporary rise in 1939 and 1940, so that by their fourth birthday a smaller proportion of the generation of illegitimate children born from 1940-1945 had been re-registered as legitimated. A factor contributing to both the increase in the number of illegitimate births and the absence of an increase in the number of legitimations may have been that some of the children would have been born legitimate following the marriage of the parents, had it not been for wartime conditions which prevented either belated marriage before the birth of the child or marriage and legitimation after the birth.

On the other hand, during the war and immediate post-war years there was a very great increase in the number of adoption orders dealt with. From 1931-1935 the annual average had been 4,500, whereas from 1946-1950 it was 17,600. It is very interesting to note that the proportion of illegitimate children still alive at their fourth birthday, who had been adopted, was more or less unchanged for girls. For boys, on the other hand, there was a material increase.

This change, from 10 per cent of the generation of boys born illegitimate in 1933-1939 having been adopted by their fourth birthday to 20 per cent of the generation of boys born illegitimate in 1940-1945 having been adopted by their fourth birthday is so striking that it is worth considering whether the increase consisted entirely of adoption by the boy's parent or by someone else. This is shown in the following table:-

Generation Born illegitimate in	Percentage of those surviving after 4 years who were adopted :-			
	By parent		By other person	
	BOYS	GIRLS	BOYS	GIRLS
1933-1939	0.9	0.9	9.2	12.6
1940-1945	3.8	3.2	15.9	10.6

It will be seen that in the case of girls the increase in the percentage adopted by a parent was balanced by an almost corresponding decrease in that adopted by another person. For boys, the proportion adopted by parents was not materially different from that for girls but the proportion adopted by another person rose from 9 per cent in the 1933-1939 generation to 16 per cent for the 1940-1945 generation. It would be interesting to speculate on the possible circumstances in wartime which made the mothers of illegitimate children more ready to give up their sons for adoption than their daughters or - alternatively or perhaps additionally - had adopters of other people's children a marked preference for boys.

In any case there was little difference between the proportion adopted by their fourth birthday between boys and girls in the following generation, the illegitimate children born between 1946-1949. By this time, which was in the early 1950's, the stage had been reached at which just over one quarter of the children had been adopted or legitimated by their fourth birthday and rather over four times as many had been adopted as had been legitimated. In considering these figures it is essential to remember that at this time it was still not possible for parents who were affected by the "marriage bar" to legitimate their children by their marriage, although the marriage put them in a position to provide the child with a legitimated status by way of adoption. For the same generation by their seventeenth birthday more than a third of the children had been adopted or legitimated and again about four times as many had been adopted as had been legitimated.

Although the generation of illegitimate children born between 1950 and 1954 was smaller than the two preceding ones, averaging 33 thousand a year compared with 45 thousand a year between 1946 and 1949, there was very little change in the proportion of the children who had been adopted or legitimated by their fourth birthday. The next big change came with the generation born between 1955 and 1959, which was little different in size but which benefited more immediately from the *Legitimacy Act, 1959*. Accordingly, the proportion of this generation which had been legitimated by its fourth birthday was slightly larger than previous generations.

In the next generation many more illegitimate children were born, 49 thousand a year on average between 1959 and 1963 compared with 35 thousand a year between 1955 and 1959, and although the number of re-registrations of births of legitimated persons that took place increased, not more than about two thirds of the legitimations of the children born in 1963 are included in this study.

Table 36(A). Change of status of illegitimate children whilst minors, England and Wales

Note: The data are incomplete for ages below the dotted line

Males 1927-1932

Age (Exact)	Survivors of 10,000 illegitimate males born in the year 1927-1932					Deaths	Adoptions		Legitimation	Deaths by Status of Child			
	Total	Adopted		Legitimated	Others					Adopted		Legitimated	Other
		By parent	By other person				By parent	By other person		By parent	By other person		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(j)	(k)	(l)	(m)	(n)
0	10,000	-	-	-	10,000	1,252	2	146	467	-	-	-	1,252
1	8,748	2	146	467	8,133	194	3	127	113	-	3	10	181
2	8,554	5	270	570	7,709	66	6	73	79	-	2	4	60
3	8,488	11	341	645	7,491	35	10	60	53	-	1	3	31
4	8,453	21	400	695	7,337	27	11	56	44	-	1	2	24
5	8,426	32	455	737	7,202	25	10	63	24	-	1	2	22
6	8,401	42	517	759	7,083	18	14	23	7	-	1	2	15
7	8,383	56	539	764	7,024	14	12	19	12	-	1	1	12
8	8,369	68	557	775	6,969	12	15	25	8	-	1	1	10
9	8,357	83	581	782	6,911	10	8	10	6	-	1	1	8
10	8,347	91	590	787	6,879	9	23	26	6	-	1	1	7
11	8,338	114	615	792	6,817	8	23	17	7	-	1	1	6
12	8,330	137	631	798	6,764	8	23	17	6	-	1	1	6
13	8,322	160	647	803	6,712	8	33	24	5	-	1	1	6
14	8,314	193	670	807	6,644	8	48	34	5	-	1	1	6
15	8,306	241	703	811	6,551	9	18	14	2	-	1	1	7
16	8,297	259	716	812	6,510	10	17	12	-	-	1	1	8
17	8,287	276	727	811	6,473	10	11	4	-	-	1	1	8
18	8,277	287	730	810	6,450	11	7	4	2	-	1	1	9
19	8,266	294	733	811	6,428	11	7	5	-	-	1	1	9
20	8,255	301	737	810	6,407	12	7	5	1	-	1	1	10
21	8,243	308	741	810	6,384								

Table 36(B).

Females 1927-1932

Age (Exact)	Survivors of 10,000 illegitimate females born in the year 1927-1932					Deaths	Adoptions		Legitimation	Deaths by Status of Child			
	Total	Adopted		Legitimated	Others					Adopted		Legitimated	Other
		By parent	By other person				By parent	By other person		By parent	By other person		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(j)	(k)	(l)	(m)	(n)
0	10,000	-	-	-	10,000	1,018	2	241	389	-	-	-	1,018
1	8,982	2	241	389	8,350	183	4	177	130	-	5	8	170
2	8,799	6	413	511	7,869	64	5	109	69	-	3	4	57
3	8,735	11	519	576	7,629	33	8	86	51	-	2	2	29
4	8,702	19	603	625	7,455	26	18	70	37	-	2	2	22
5	8,676	37	671	660	7,308	22	18	54	27	-	2	2	18
6	8,654	55	723	685	7,191	16	6	37	19	-	1	1	14
7	8,638	61	759	703	7,115	13	25	25	8	-	1	1	11
8	8,625	86	783	710	7,046	10	15	15	5	-	1	1	8
9	8,615	101	797	714	7,003	9	22	26	4	-	1	1	7
10	8,606	123	822	717	6,944	8	17	20	6	-	1	1	6
11	8,598	140	841	722	6,895	7	30	17	4	-	1	1	5
12	8,591	170	857	725	6,839	7	24	20	-	-	1	1	5
13	8,584	194	876	724	6,790	7	25	14	1	-	1	1	5
14	8,577	219	889	724	6,745	8	38	19	2	-	1	1	6
15	8,569	257	907	725	6,680	8	12	14	1	-	1	1	6
16	8,561	269	920	725	6,647	8	18	12	-	-	1	1	6
17	8,553	287	931	724	6,611	8	13	7	1	-	1	1	6
18	8,545	300	937	724	6,584	8	9	6	-	-	1	1	6
19	8,537	309	942	724	6,562	8	5	5	-	-	1	1	6
20	8,529	314	946	723	6,546	8	7	2	-	-	1	1	6
21	8,521	321	947	722	6,531								

Table 36(C).

Males 1933-1939

Age (Exact)	Survivors of 10,000 illegitimate males born in the year 1933-1939					Deaths	Adoptions		Legitimation	Deaths by Status of Child			
	Total	Adopted		Legitimated	Others					Adopted		Legitimated	Other
		By parent	By other person				By parent	By other person		By parent	By other person		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(j)	(k)	(l)	(m)	(n)
0	10,000	-	-	-	10,000	996	3	411	455	-	-	-	996
1	9,004	3	411	455	8,135	136	12	230	185	-	6	7	123
2	8,868	15	635	633	7,585	48	30	112	87	-	3	3	42
3	8,820	45	744	717	7,314	26	36	70	44	-	2	2	22
4	8,794	81	812	759	7,142	20	60	78	39	-	2	2	16
5	8,774	141	888	796	6,949	18	59	46	25	-	2	2	14
6	8,756	200	932	819	6,805	13	38	29	18	-	1	1	11
7	8,743	238	950	836	6,709	11	25	35	5	-	1	1	9
8	8,732	263	994	840	6,635	9	20	19	5	-	1	1	7
9	8,723	283	1,012	844	6,584	7	27	26	3	-	1	1	3
10	8,716	310	1,037	846	6,523	6	52	20	3	-	1	1	4
11	8,710	362	1,056	848	6,444	6	45	15	3	-	1	1	4
12	8,704	407	1,070	850	6,377	5	35	11	-	-	1	-	4
13	8,699	442	1,080	850	6,327	5	25	10	7	-	1	-	4
14	8,694	467	1,089	857	6,281	6	42	8	2	-	1	1	4
15	8,688	509	1,096	858	6,225	6	41	15	2	-	1	1	4
16	8,682	550	1,110	859	6,163	7	15	7	1	-	1	1	5
17	8,675	565	1,116	859	6,135	7	10	8	-	-	1	1	5
18	8,668	575	1,123	858	6,112	8	7	6	-	1	1	1	5
19	8,660	581	1,128	857	6,094	8	8	4	3	1	1	1	5
20	8,652	588	1,131	859	6,074	9	8	4	8	1	1	1	6
21	8,643	595	1,134	866	6,048								

Table 36(D).

Females 1933-1939

Age (Exact)	Survivors of 10,000 illegitimate females born in the year 1933-1939					Deaths	Adoptions		Legitimation	Deaths by Status of Child			
	Total	Adopted		Legitimated	Others					Adopted		Legitimated	Other
		By parent	By other person				By parent	By other person		By parent	By other person		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(j)	(k)	(l)	(m)	(n)
0	10,000	–	–	–	10,000	794	8	618	473	–	–	–	794
1	9,206	8	618	473	8,107	125	19	289	153	–	8	6	111
2	9,087	27	899	620	7,535	45	22	142	82	–	4	3	38
3	9,036	49	1,037	699	7,251	25	33	106	49	–	3	2	20
4	9,011	82	1,140	746	7,043	19	45	70	29	–	2	2	15
5	8,992	127	1,208	773	6,884	16	58	72	17	–	2	1	13
6	8,976	185	1,278	789	6,724	12	37	41	17	–	2	1	9
7	8,964	222	1,317	805	6,620	9	31	31	6	–	1	1	7
8	8,955	253	1,347	810	6,545	7	41	34	9	–	1	1	5
9	8,948	294	1,380	815	6,456	6	32	31	1	–	1	1	4
10	8,942	326	1,410	818	6,388	5	48	18	5	–	1	–	4
11	8,937	374	1,427	823	6,313	5	46	21	2	–	1	–	4
12	8,932	420	1,447	825	6,240	4	32	13	–	–	1	–	3
13	8,928	452	1,459	825	6,192	4	17	14	1	–	1	–	3
14	8,924	469	1,472	826	6,157	5	40	10	–	–	1	–	4
15	8,919	509	1,481	826	6,103	4	32	13	–	–	1	–	3
16	8,915	541	1,493	826	6,055	5	16	8	–	–	1	–	4
17	8,910	557	1,500	826	6,027	4	10	9	–	–	1	–	3
18	8,906	567	1,508	826	6,005	4	8	7	1	–	1	–	3
19	8,902	575	1,514	827	5,986	4	4	5	3	–	1	–	3
20	8,898	579	1,518	830	5,971	5	8	2	7	–	1	–	4
21	8,893	587	1,519	837	5,950								

Table 36(E).

Males 1940-1945

Age (Exact)	Survivors of 10,000 illegitimate males born in the year 1940-1945					Deaths	Adoptions		Legitimation	Deaths by Status of Child			
	Total	Adopted		Legitimated	Others		By parent	By other person		Adopted		Legitimated	Other
		By parent	By other person							By parent	By other person		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(j)	(k)	(l)	(m)	(n)
0	10,000	-	-	-	10,000	757	59	959	338	-	-	-	757
1	9,243	59	959	338	7,887	78	87	302	123	-	8	3	67
2	9,165	146	1,253	458	7,308	30	90	118	67	-	4	1	25
3	9,135	236	1,367	524	7,008	16	109	88	35	-	2	1	13
4	9,119	345	1,453	558	6,763	12	141	70	16	-	2	1	9
5	9,107	486	1,521	573	6,527	10	105	58	6	1	2	1	6
6	9,097	590	1,577	578	6,352	8	61	35	5	1	1	1	5
7	9,089	650	1,611	582	6,246	6	53	21	4	-	1	-	5
8	9,083	703	1,631	586	6,163	5	34	10	2	-	1	-	4
9	9,078	737	1,640	588	6,113	5	33	14	3	-	1	-	4
10	9,073	770	1,653	591	6,059	4	33	14	3	-	1	-	3
11	9,069	803	1,666	594	6,006	4	33	10	2	-	1	-	3
12	9,065	836	1,675	596	5,958	4	31	7	-	-	1	-	3
13	9,061	867	1,681	596	5,917	4	25	7	7	-	1	-	3
14	9,057	892	1,687	603	5,875	5	43	4	26	-	1	-	4
15	9,052	935	1,690	629	5,798	6	48	11	22	1	1	-	4
16	9,046	982	1,700	651	5,713	7	18	4	20	1	1	1	4
17	9,039	999	1,703	670	5,667	8	10	4	9	1	2	1	4
18	9,031	1,008	1,705	678	5,640	8	6	3	17	1	2	1	4
19	9,023	1,013	1,706	694	5,610	9	5	1	7	1	2	1	5
20	9,014	1,017	1,706	700	5,592	9	3	1	-	1	2	1	5
21	9,005	1,019	1,704	699	5,583								

Table 36(F).

Females 1940-1945

Age (Exact)	Survivors of 10,000 illegitimate females born in the year 1940-1945					Deaths	Adoptions		Legitimation	Deaths by Status of Child			
	Total	Adopted		Legitimated	Others					Adopted		Legitimated	Other
		By parent	By other person				By parent	By other person		By parent	By other person		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(j)	(k)	(l)	(m)	(n)
0	10,000	-	-	-	10,000	609	52	407	326	-	-	-	609
1	9,391	52	407	326	8,606	72	73	319	114	-	3	3	66
2	9,319	125	723	437	8,034	27	95	166	81	-	2	1	24
3	9,292	220	887	517	7,668	15	76	97	42	-	1	1	13
4	9,277	296	983	558	7,440	10	151	57	21	-	1	1	8
5	9,267	447	1,039	578	7,203	9	131	55	7	-	1	1	7
6	9,258	578	1,093	584	7,003	6	72	32	6	-	1	-	5
7	9,252	650	1,124	590	6,888	5	47	25	-	-	1	-	4
8	9,247	697	1,148	590	6,812	4	40	14	3	-	-	-	4
9	9,243	737	1,162	593	6,751	4	41	11	5	-	-	-	4
10	9,239	778	1,173	598	6,690	3	34	12	-	-	-	-	3
11	9,236	812	1,185	598	6,641	3	36	12	1	-	-	-	3
12	9,233	848	1,197	599	6,589	3	27	7	1	-	-	-	3
13	9,230	875	1,204	600	6,551	3	17	7	6	-	-	-	3
14	9,227	892	1,211	606	6,518	3	39	5	38	-	-	-	3
15	9,224	931	1,216	644	6,433	3	40	10	19	-	-	-	3
16	9,221	971	1,226	663	6,361	3	20	5	17	-	-	-	3
17	9,218	991	1,231	680	6,316	4	11	6	18	-	1	-	3
18	9,214	1,002	1,236	698	6,278	4	7	4	12	-	1	-	3
19	9,210	1,009	1,239	710	6,252	4	3	2	7	-	1	-	3
20	9,206	1,012	1,240	717	6,237	4	3	1	-	-	1	-	3
21	9,202	1,015	1,240	717	6,230								

Table 36(G).

Males 1946-1949

Age (Exact)	Survivors of 10,000 illegitimate males born in the year 1946-1949					Deaths	Adoptions		Legitimation	Deaths by Status of Child			
	Total	Adopted		Legitimated	Others		By parent	By other person		Adopted		Legitimated	Other
		By parent	By other person							By parent	By other person		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(j)	(k)	(l)	(m)	(n)
0	10,000	-	-	-	10,000	565	33	1,319	344	-	-	-	565
1	9,435	33	1,319	344	7,739	44	72	318	94	-	6	2	36
2	9,391	105	1,631	436	7,219	18	73	123	51	-	3	1	14
3	9,373	178	1,751	486	6,958	10	75	62	23	-	2	1	7
4	9,363	253	1,811	508	6,791	8	90	51	18	-	2	-	6
5	9,355	343	1,860	526	6,626	7	104	43	10	-	1	-	6
6	9,348	447	1,902	536	6,463	6	58	24	5	-	1	-	5
7	9,342	505	1,925	541	6,371	5	53	16	2	-	1	-	4
8	9,337	558	1,940	543	6,296	4	33	8	2	-	1	-	3
9	9,333	591	1,947	545	6,250	4	29	13	3	-	1	-	3
10	9,329	620	1,959	548	6,202	4	37	10	24	-	1	-	3
11	9,325	657	1,968	572	6,128	4	31	8	32	-	1	-	3
12	9,321	688	1,975	604	6,054	4	24	6	54	-	1	-	3
13	9,317	712	1,980	658	5,967	4	18	5	40	-	1	-	3
14	9,313	730	1,984	698	5,901	5	25	3	9	-	1	-	4
15	9,308	755	1,986	707	5,860	6	25	5	3	-	1	-	5
16	9,302	780	1,990	710	5,822	7	6	2	2	1	1	1	4
17	9,295	785	1,991	711	5,808		1	1	-				

Table 36(H).

Females 1946-1949

Age (Exact)	Survivors of 10,000 illegitimate females born in the year 1946-1949					Deaths	Adoptions		Legitimation	Deaths by Status of Child			
	Total	Adopted		Legitimated	Others					Adopted		Legitimated	Other
		By parent	By other person				By parent	By other person		By parent	By other person		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(j)	(k)	(l)	(m)	(n)
0	10,000	-	-	-	10,000	460	27	1,510	278	-	-	-	460
1	9,540	27	1,510	278	7,725	41	62	293	91	-	6	1	34
2	9,499	89	1,797	368	7,245	16	73	117	48	-	3	1	10
3	9,483	162	1,911	415	6,995	9	70	65	33	-	2	-	7
4	9,474	232	1,974	448	6,920	6	97	45	9	-	1	-	5
5	9,468	329	2,018	457	6,664	5	106	39	7	-	1	-	4
6	9,463	435	2,056	464	6,508	4	62	22	10	-	1	-	3
7	9,459	497	2,077	474	6,411	3	44	18	1	-	1	-	2
8	9,456	541	2,094	475	6,346	3	38	12	2	-	1	-	2
9	9,453	579	2,105	477	6,292	3	38	11	7	-	1	-	2
10	9,450	617	2,115	484	6,234	3	37	8	25	-	1	-	2
11	9,447	654	2,122	509	6,162	3	33	9	29	-	1	-	2
12	9,444	687	2,130	538	6,089	3	22	6	57	-	1	-	2
13	9,441	709	2,135	595	6,002	2	12	7	39	-	-	-	2
14	9,439	721	2,142	634	5,942	3	24	4	8	-	1	-	2
15	9,436	745	2,145	642	5,904	3	22	5	8	-	1	-	2
16	9,433	767	2,149	650	5,867	3	8	1	3	-	1	-	2
17	9,430	775	2,149	653	5,853		1	1	-				

Table 36(J).

Males 1950-1954

Age (Exact)	Survivors of 10,000 illegitimate males born in the year 1950-1954					Deaths	Adoptions		Legitimation	Deaths by Status of Child			
	Total	Adopted		Legitimated	Others					Adopted		Legitimated	Other
		By parent	By other person				By parent	By other person		By parent	By other person		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(j)	(k)	(l)	(m)	(n)
0	10,000	-	-	-	10,000	387	21	1,344	393	-	-	-	387
1	9,613	21	1,344	393	7,855	22	49	271	104	-	3	1	18
2	9,591	70	1,612	496	7,413	12	67	123	46	-	2	1	9
3	9,579	137	1,733	541	7,168	7	75	72	14	-	1	-	6
4	9,572	212	1,804	555	7,001	7	95	59	18	-	1	-	6
5	9,565	307	1,862	573	6,823	6	90	40	24	-	1	-	5
6	9,559	397	1,901	597	6,664	5	50	24	28	-	1	-	4
7	9,554	447	1,924	625	6,558	5	43	17	27	-	1	-	4
8	9,549	490	1,940	652	6,467	4	25	9	40	-	1	-	3
9	9,545	515	1,948	692	6,390	4	19	12	27	-	1	-	3
10	9,541	534	1,959	719	6,329	4	16	6	17	-	1	-	3
11	9,537	550	1,964	736	6,287	4	11	3	5	-	1	-	3
12	9,533	561	1,966	741	6,265	4	6	1	4	-	1	-	3
13	9,529	567	1,966	745	6,251		1	-	-				

Table 36(K).

Females 1950-1954

Age (Exact)	Survivors of 10,000 illegitimate females born in the year 1950-1954					Deaths	Adoptions		Legitimation	Deaths by Status of Child			
	Total	Adopted		Legitimated	Others					Adopted		Legitimated	Other
		By parent	By other person				By parent	By other person		By parent	By other person		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(j)	(k)	(l)	(m)	(n)
0	10,000	-	-	-	10,000	311	25	1,475	419	-	-	-	311
1	9,689	25	1,475	419	7,770	21	52	268	86	-	3	1	17
2	9,668	77	1,740	504	7,347	10	72	115	48	-	2	1	7
3	9,658	149	1,853	551	7,105	6	73	65	29	-	1	-	5
4	9,652	222	1,917	580	6,933	5	108	45	23	-	1	-	4
5	9,647	330	1,961	603	6,753	4	95	37	26	-	1	-	3
6	9,643	425	1,997	629	6,592	4	54	23	28	-	1	-	3
7	9,639	479	2,019	657	6,484	3	36	19	24	-	1	-	2
8	9,636	515	2,037	681	6,403	3	30	11	34	-	1	-	2
9	9,633	545	2,047	715	6,326	3	27	9	31	-	1	-	2
10	9,630	572	2,055	746	6,257	3	17	6	5	-	1	-	2
11	9,627	589	2,060	751	6,227	3	12	5	4	-	1	-	2
12	9,624	601	2,064	755	6,204	3	6	2	5	-	1	-	2
13	9,621	607	2,065	760	6,189		1	1	-				

Table 36(L).

Males 1955-1959

Age (Exact)	Survivors of 10,000 illegitimate males born in the year 1955-1959					Deaths	Adoptions		Legitimation	Deaths by Status of Child			
	Total	Adopted		Legitimated	Others					Adopted		Legitimated	Other
		By parent	By other person				By parent	By other person		By parent	By other person		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(j)	(k)	(l)	(m)	(n)
0	10,000	-	-	-	10,000	317	32	1,544	441	-	-	-	317
1	9,683	32	1,544	441	7,666	18	59	265	152	-	3	1	14
2	9,665	91	1,806	592	7,176	12	80	112	121	-	2	1	9
3	9,653	171	1,916	712	6,854	7	82	66	58	-	1	1	5
4	9,646	253	1,981	769	6,643	6	91	48	63	-	1	-	5
5	9.640	344	2,028	832	6,436	6	45	27	18	-	1	1	4
6	9,634	389	2,054	849	6,342	5	18	11	12	-	1	-	4
7	9,629	407	2,064	861	6,297	5	9	4	7	-	1	-	4
8	9,624	416	2,067	868	6,273		2	1	3				

Table 36(M).

Females 1955-1959

Age (Exact)	Survivors of 10,000 illegitimate females born in the year 1955-1959					Deaths	Adoptions		Legitimation	Deaths by Status of Child			
	Total	Adopted		Legitimated	Others					Adopted		Legitimated	Other
		By parent	By other person				By parent	By other person		By parent	By other person		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(j)	(k)	(l)	(m)	(n)
0	10,000	-	-	-	10,000	250	34	1,591	423	-	-	-	250
1	9,750	34	1,591	423	7,702	15	65	246	170	-	2	1	12
2	9,735	99	1,835	592	7,209	9	77	110	109	-	2	1	6
3	9,726	176	1,943	700	6,907	7	76	67	62	-	1	1	5
4	9,719	252	2,009	761	6,697	5	96	41	73	-	1	-	4
5	9,714	348	2,049	834	6,483	4	52	22	33	-	1	-	3
6	9,710	400	2,070	867	6,373	4	21	10	14	-	1	-	3
7	9,706	421	2,079	881	6,325	3	9	5	4	-	1	-	2
8	9,703	430	2,083	885	6,305		2	1	1				

Table 36(N).

Males 1959-1963

Age (Exact)	Total	Survivors of 10,000 illegitimate males born in the year 1959-1963				Deaths	Adoptions		Legitimation	Deaths by Status of Child			
		Adopted		Legitimated	Others					Adopted		Legitimated	Other
		By parent	By other person				By parent	By other person		By parent	By other person		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(j)	(k)	(l)	(m)	(n)
0	10,000	-	-	-	10,000	291	27	1,435	489	-	-	-	291
1	9,709	27	1,435	489	7,758	20	37	165	133	-	3	1	16
2	9,689	64	1,597	621	7,407	12	30	44	50	-	2	1	9
3	9,677	94	1,639	670	7,274	7	17	13	17	-	1	-	6
4	9,670	111	1,651	687	7,221		7	4	5				

Table 36(O).

Females 1959-1963

Age (Exact)	Total	Survivors of 10,000 illegitimate females born in the year 1959-1963				Deaths	Adoptions		Legitimation	Deaths by Status of Child			
		Adopted		Legitimated	Others					Adopted		Legitimated	Other
		By parent	By other person				By parent	By other person		By parent	By other person		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(j)	(k)	(l)	(m)	(n)
0	10,000	-	-	-	10,000	236	28	1,414	500	-	-	-	236
1	9,764	28	1,414	500	7,822	14	37	155	164	-	2	1	11
2	9,750	65	1,567	663	7,455	9	32	45	51	-	1	1	7
3	9,741	97	1,611	713	7,320	7	17	17	13	-	1	1	5
4	9,734	114	1,627	725	7,268		8	4	7				

GENERAL MORTALITY

In 1965 there were 549,379 deaths registered in England and Wales. Of those dying 282,328 were males and 267,051 were females. Related to the estimated mid-year population the crude death rate for all persons was 11.5 per thousand. The crude death rate for males was 12.2 per thousand and that for females 10.9 per thousand. The Standardised Mortality Ratio (SMR) in 1965 (1950-52 = 100) was 88 for all persons, 93 for males and 83 for females.

Diagram 6 shows the trend of the crude death rates and the Standardised Mortality Ratios for both sexes over the past 15 years. It is seen that the crude death rates have changed very little over this period, the graphs for both sexes being parallel. The Standardised Mortality Ratios show a gradual decline for both sexes, but the fall is steeper for females than for males.

The upward bulge of deaths in the years 1961-63 was due to severe winters in 1960-61, 1961-62 and 1962-63, as is seen from Diagram 7 which shows the annual crude death rates by quarters for the past ten years. The more recent winters have been less severe.

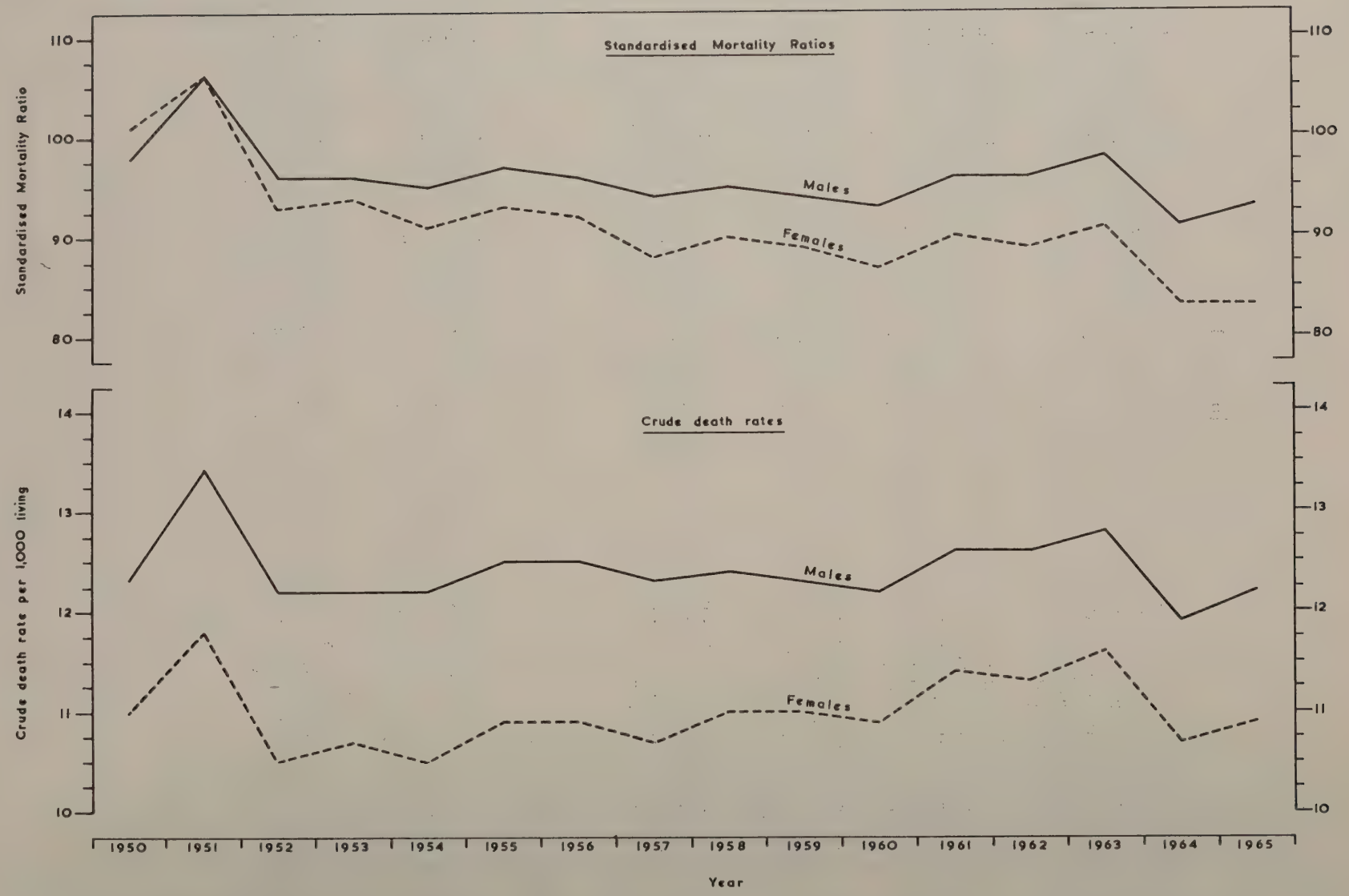
Of the 549,379 deaths during the year, 113,451 (20.7 per cent) were due to arteriosclerotic heart disease, including coronary disease, 107,770 (19.6 per cent) to neoplasms, 78,147 (14.2 per cent) to strokes, 61,157 (11.1 per cent) to pneumonia and bronchitis and 24,254 (4.4 per cent) to accidents, poisonings, and violence.

Notifiable diseases

There were 138 cases of typhoid fever notified in 1965, about average for recent years, with six deaths as a result of the infection. Most of the cases were sporadic, the largest single outbreak involving 19 cases. The number of notifications of paratyphoid fever, 832 with 2 deaths, was the largest since 1955, chiefly due to a single outbreak in Lancashire.

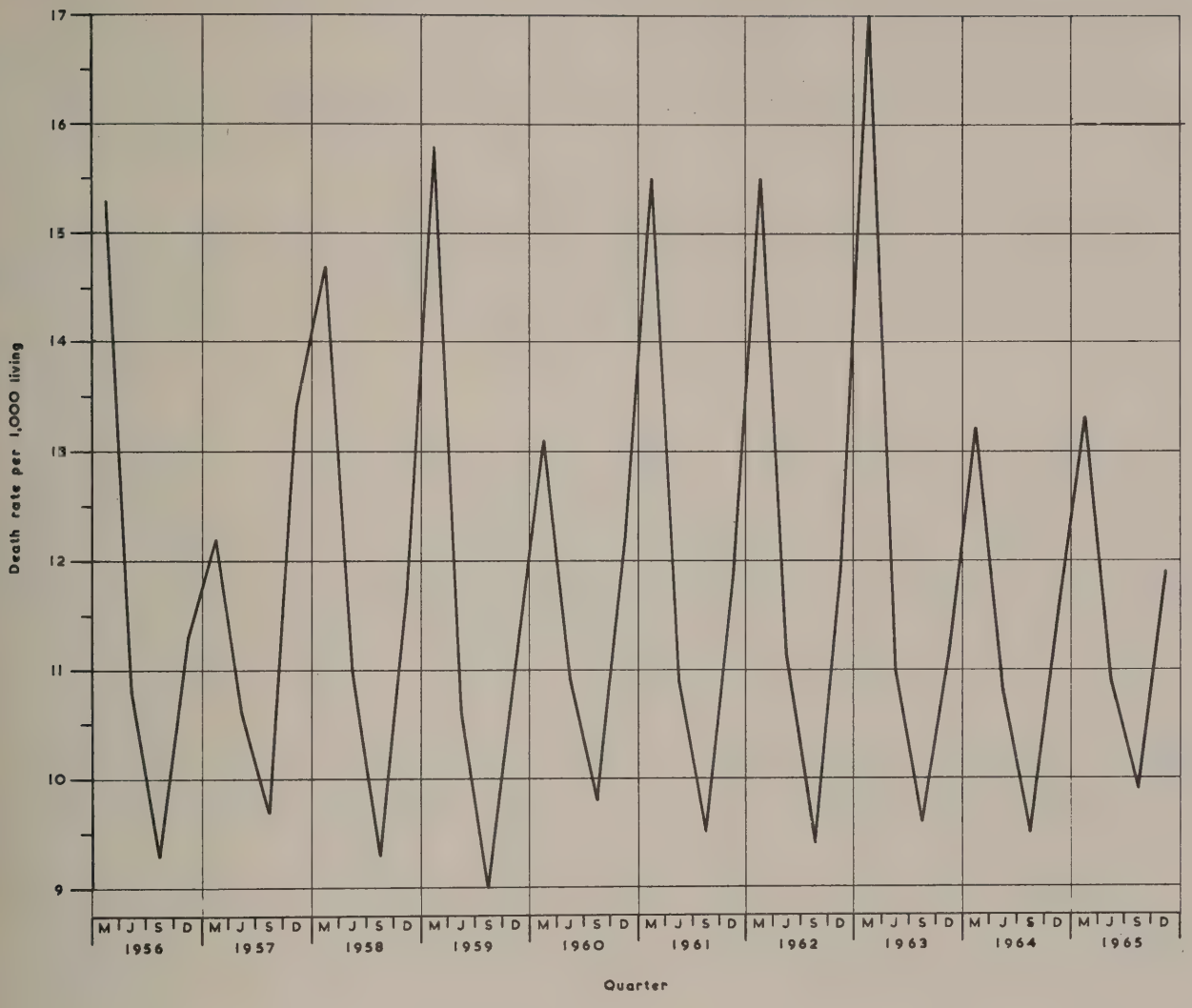
1965 was a measles year, though the number of cases notified, 502,209, is smaller than in recent odd-numbered years, due presumably to fewer susceptibles following the larger than average case-load in 1964. Measles was given as the cause of death in 115 cases, 0.02 per cent of notifications, as in the past seven years.

Diagram 6



Crude annual death rates per 1,000 living, and Standardised Mortality Ratios, 1950 to 1965, England and Wales

Diagram 7



Annual death rates per 1,000 living, by quarters, in each year 1956 to 1965, England and Wales

Poliomyelitis was notified more frequently in 1965 than in the two previous years. Of the 91 notifications, including 55 paralytic cases, 60 were from a single outbreak in Blackburn. Three deaths were attributed immediately to poliomyelitis during the year.

Notifications of meningococcal infection (406 cases) were fewer than for any previous year, although there were rather more deaths from this infection than in 1964, 112 compared with 98.

Whooping cough notifications were light in 1965, 12,945 cases, and deaths from this disease (21, of which 7 were of males) being the lowest recorded.

For two years in succession there has been no death from diphtheria and there were only 25 cases notified in 1965. Notifications of scarlet fever were rather higher than usual, 26,725 cases but only one death.

Influenza was not a severe hazard in 1965, causing 814 deaths, the lowest number for at least twenty years, and notifications of pneumonia were similarly minimal.

There was no smallpox in England and Wales in 1965.

Respiratory tuberculosis now claims only 0.4 per cent of all deaths. Mortality rates and notification rates for this disease are now falling in every sex-age group, even among males 75 years and over who were the most stubborn in this respect.

Cancer

There were 106,338 deaths from malignant disease in 1965, an increase of 1.6 per cent on 1964. The increase was greater for males, 2.2 per cent, than for females, 0.9 per cent. Comparable increases in the crude cancer death rates were 1.4 per cent for males, 0.2 per cent for females, 0.8 per cent overall. Standardising indirectly on the 1950-52 experience, the SMR for cancer in males rose from 111 in 1964 to 112 in 1965 whilst for females it fell from 98 to 97.

Cancer of the lung continued to increase its toll in both sexes, but the proportionate increase was greater for women, 7.0 per cent, than for men, 3.5 per cent. This disparity is seen also in the SMR, the ratio for men increasing from 168 in 1964 to 171 in 1965, whilst the figures for women were 159 rising to 168. It seems likely that this ratio will be greater for women than for men in 1966.

The crude death rate and SMR for cancer of the female breast fell slightly in 1965, whilst the rates for cancer of the prostate increased. Since the rates for genital cancers were on balance unchanged in both sexes, cancer of the secondary sex glands and genital organs as a whole increased for males and decreased for females.

Rates and SMRs for malignant neoplasm of the stomach continued to fall in both sexes, as did the indices for carcinoma of the rectum, but the decreases for growths in the mouth and pharynx are seen predominantly in males.

The mortality from the reticuloses has been rising over the past ten years in both sexes, but the change is erratic in males and there was a slight reduction from 1964. The rise in females is steadier and the rates for both sexes are moving closer together.

The SMRs for malignant melanoma are increasing steadily in both sexes.

Diseases of the circulatory system

After the temporary fall in 1964 following the ravages of the severe winter in 1963, the mortality due to arteriosclerotic heart disease, including coronary disease has begun to rise again. Chronic rheumatic heart disease continues to wane in males. The fall in the mortality due to hypertensive heart disease and hypertension without mention of the heart is not so pronounced as in previous years but the general downward trend continues.

The increase in mortality from diseases of the veins, chiefly thromboembolism, has also resumed its upward trend after the lull in 1964. The rates for 1965 showed increases of the order of 5 to 10 per cent over 1964 rates.

Infant mortality and stillbirths

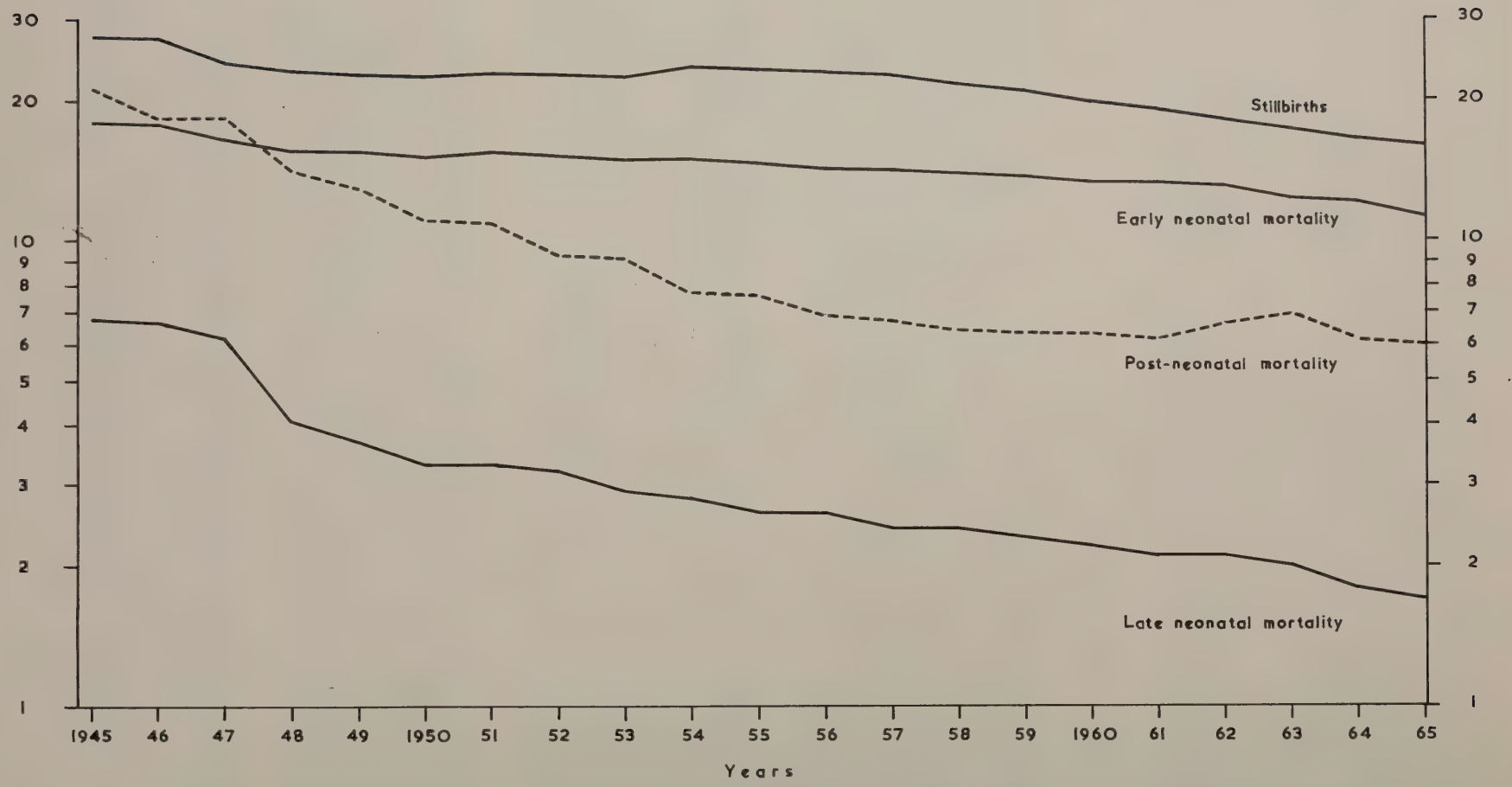
The number of live births per annum in England and Wales rose steadily from 667,811 in 1955 to a maximum of 875,972 in 1964. In 1965 the figure dropped by 1.5 per cent to 862,725. There was a corresponding fall in the crude live birth rate from 18.5 per thousand in 1964 to 18.1 per thousand in 1965. The number of stillbirths in 1965 was 13,841, a decrease of 4.8 per cent on the 1964 figure. Although this was in line with the percentage decrease in the number of stillbirths for previous years, it was not sufficient to compensate for the reduction in the number of live births. The decrease in the stillbirth rate was only 3.1 per cent from 1964 to 1965, compared with a fairly constant annual decrease of about 5 per cent since 1960.

This phenomenon of a slackening of the fall in stillbirth rate with a fall in the live birth rate was seen also in the early nineteen-fifties when the birth rate began to fall after its post-war bulge. This is clear from the top graph in Diagram 8. Towards 1953 the stillbirth rate flattened out, and even rose a little in 1954, before falling again with the increased live birth rate over the next ten years. This countercyclical behaviour can be explained by the lower stillbirth rates experienced by mothers between the ages of 20 and 34, compared with mothers under 20 and 35 and over. It is the former group whose fertility changes contribute most to the change in the live birth rate.

Diagram 8 also shows the three fractions of the infant mortality rate - early neonatal, late neonatal and post-neonatal mortality per thousand live births. The rates are graphed on a logarithmic scale for each year since 1945. The transition from the stillbirth rate, which is due to genetic and maternal causes, through the early neonatal rate and the late neonatal rate to the post-neonatal rate, which is more readily influenced by external causes, is seen from a comparison of the slopes of the graphs and the bulges produced by the severe winters in 1962 and 1963.

The infant mortality rate fell by 5 per cent to 19.0 per thousand in 1965. The improvement was most marked in the first, second, third and fourth weeks of life where the decrement was 6 per cent, compared with the remainder of the first year (2 per cent). The largest decreases are seen in deaths attributed to post-natal asphyxia, to maternal toxaemia and to gastro-enteritis. A contrary tendency is seen in the deaths due to accidental and violent causes, including suffocation, cot deaths, lack of care, infanticide and other injuries. The infant mortality

Diagram 8



Infant mortality rates per 1,000 live births in the neonatal periods and stillbirth rates per 1,000 total births, 1945 to 1965, England and Wales

rate for this group of causes has increased by 38 per cent in the past five years. The rise is seen in all parts of the country but is most marked in the North of England and in the South East excluding Greater London. Some of the increase may be due to a greater awareness by doctors of the possibility of injury as a cause of infant death.

Maternal Mortality

There were 169 deaths in 1965 from causes associated with pregnancy and childbirth and a further 52 attributed to abortion. The maternal mortality rate for causes other than abortion thus declined from 19.9 per 100,000 total births in 1964 to 19.3 per 100,000 total births in 1965. The greatest single cause in this group is toxaemia of pregnancy, to which 48 deaths were attributed in 1965, 14 more than in 1964, but this is within the range of chance fluctuation. The maternal mortality rate due to abortion having remained constant at 5.6 per 100,000 total births in 1963 and 1964 has slightly increased to 5.9 per 100,000 total births in 1965.

Mortality at different ages since 1950

Five years ago in the *Statistical Review* of 1960, Part III (Commentary), the mortality in that year for the various "ages of man" was compared with that in 1950. Tables C37(A) to C39 present a similar analysis for the main age-groups extended to include the 1955 and 1965 rates. The grouping used is as follows:-

	Age (in years)
pre-school children	1-4
school children	5-14
young adults	15-24
adults	25-44
the middle aged	45-64
the retired	65-74
the aged	75 and over

Table C37(A). Death rates per 100,000 living and percentage change, in each 5-year period, for principal causes, by sex and age, 1950 to 1965, England and Wales

All causes

Age	1950	1955		1960		1965	
	Rate	Rate	Percentage change since 1950	Rate	Percentage change since 1955	Rate	Percentage change since 1960
				MALES			
1-4	142	104	- 27	95	- 9	87	- 8
5-14	66	47	- 29	45	- 4	45	0
15-24	121	103	- 15	103	0	102	- 1
25-44	232	189	- 19	178	- 6	180	+ 1
45-64	1,424	1,353	- 5	1,339	- 1	1,406	+ 5
65-74	5,333	5,422	+ 2	5,261	- 3	5,299	+ 1
75 and over	13,676	14,380	+ 5	13,516	- 6	13,608	+ 1
				FEMALES			
1-4	127	97	- 24	78	- 20	76	- 3
5-14	47	34	- 28	30	- 12	30	0
15-24	95	48	- 49	40	- 17	42	+ 5
25-44	190	144	- 24	126	- 12	126	0
45-64	858	768	- 10	725	- 6	730	+ 1
65-74	3,470	3,234	- 7	2,947	- 9	2,835	- 4
75 and over	11,480	11,071	- 4	10,438	- 6	10,030	- 4

Table C37(A) shows the changes in overall mortality at these ages over the period 1950-65. Amongst females there were improvements in all age-groups between 1950 and 1960, especially for the younger age-groups in the first half of the decade. During the period 1960-65, however, these changes had dwindled to negligible proportions. For males below 65 years of age there were commensurate improvements between 1950 and 1955, but the falls in rates during the latter half of the decade were less than for the females and had also reduced to insignificance by 1965. The two oldest male age-groups show very little change throughout.

Table C37(B). Infective and parasitic diseases (ICD Nos. 001-138)

Age	1950	1955		1960		1965	
	Rate	Rate	Percentage change since 1950	Rate	Percentage change since 1955	Rate	Percentage change since 1960
				MALES			
1-4	36	13	- 64	4.9	- 62	4.8	- 2
5-14	11	3.3	- 70	1.4	- 58	1.3	- 7
15-24	25	5.2	- 79	1.4	- 73	1.1	- 21
25-44	50	17	- 66	6.2	- 64	3.1	- 50
45-64	108	53	- 51	28	- 47	17	- 39
65-74	129	105	- 19	74	- 30	53	- 28
75 and over	82	81	- 1	75	- 7	66	- 12
				FEMALES			
1-4	33	14	- 58	5.1	- 64	5.7	+ 12
5-14	9.5	3.1	- 67	1.4	- 55	0.91	- 35
15-24	41	5.4	- 87	1.4	- 74	1.2	- 14
25-44	42	14	- 67	5.1	- 64	2.9	- 43
45-64	32	16	- 50	9.2	- 42	7.2	- 22
65-74	39	26	- 33	19	- 27	15	- 21
75 and over	41	35	- 15	28	- 20	29	+ 4

The improvements during the nineteen fifties, most marked in adolescent females, were in the main due to the increasing control of infectious disease. Table C37(B) demonstrates this clearly. Death rates from infectious diseases fell throughout the first two 5-year intervals for both sexes in all age-groups, but most markedly among adults under 45 years. During the five years 1960 to 1965 the rates continued to fall sharply among the older people, especially males, but tended to flatten out for the younger age-groups. Although the changes are due chiefly to the bacterial diseases, especially tuberculosis, the control of poliomyelitis and fewer deaths due to measles contributed significantly in the improvement in the younger age-groups.

Table C37(C). Neoplasms (ICD Nos. 140-239)

Age	1950	1955		1960		1965	
	Rate	Rate	Percentage change since 1950	Rate	Percentage change since 1955	Rate	Percentage change since 1960
				MALES			
1-4	12	12	0	11	- 8	11	0
5-14	7.0	7.6	+ 8	8.2	+ 8	9.0	+ 10
15-24	11	11	0	10	- 9	10	0
25-44	39	39	0	38	- 3	38	0
45-64	349	365	+ 5	382	+ 5	398	+ 4
65-74	1,044	1,111	+ 6	1,178	+ 6	1,257	+ 7
75 and over	1,597	1,720	+ 8	1,779	+ 3	1,896	+ 7
				FEMALES			
1-4	11	12	+ 9	10	- 17	9.4	- 6
5-14	6.4	6.1	- 5	6.6	+ 8	6.2	- 6
15-24	7.1	7.2	+ 1	6.7	- 7	7.9	+ 18
25-44	48	46	- 4	47	+ 2	48	+ 2
45-64	277	268	- 3	266	- 1	281	+ 6
65-74	680	639	- 6	628	- 2	624	- 1
75 and over	1,146	1,090	- 5	1,088	0	1,068	- 2

Table C37(C) gives the changes in death rates from neoplasms between 1950 and 1965. Compared with the figures for infectious diseases, change is here conspicuously absent. There is no consistent pattern in the female rates, but the males 45 and over have increases of the order of 5 to 6 per cent in each of the three 5-year intervals, due to increases in the rates for carcinoma of the lung which more than compensate for decreases in gastro-intestinal cancer. The overall death rates from neoplasms for male school children rose 8 per cent in each of the first two 5-year periods and 10 per cent in the third. This consistent rise is due to an increase in the rate for malignant tumours of the brain and leukaemia, without any compensatory fall in the rates for other neoplasms. The increase for brain tumours occurred in all the male age-groups but is obscured by other changes in all but the children of school age. In pre-school boys the compensatory fall is in the rate for carcinoma of the kidney.

For girls and young women the rates for neoplasms are almost stable. In women of 25-44 the rate for cancer of the cervix is rising continuously, but this is offset in the total by falls in gastro-intestinal cancer. By contrast, the rate for cervical cancer has fallen in middle-aged women, from 24 per 100,000 in 1950 to 20 per 100,000 in 1965, but those for breast and lung cancers are increasing throughout. In elderly women decreases in mortality from gastro-intestinal and cervical new growths counterbalance substantial increases in the rate for lung cancer.

Table C37(D). Diseases of the nervous system and sense organs (ICD Nos. 330-398)

Age	1950	1955		1960		1965	
	Rate	Rate	Percentage change since 1950	Rate	Percentage change since 1955	Rate	Percentage change since 1960
				MALES			
1-4	8.0	7.1	- 11	7.9	+ 11	6.2	- 22
5-14	3.2	3.0	- 6	2.7	- 10	3.0	+ 11
15-24	7.2	5.1	- 29	4.3	- 16	4.5	+ 5
25-44	14	13	- 7	13	0	13	0
45-64	125	127	+ 2	123	- 3	120	- 2
65-74	753	764	+ 1	714	- 7	684	- 4
75 and over	2,025	2,362	+ 17	2,225	- 6	2,271	+ 2
				FEMALES			
1-4	7.9	6.1	- 23	7.0	+ 15	5.3	- 24
5-14	2.5	3.1	+ 24	2.4	- 23	2.3	- 4
15-24	4.6	3.7	- 20	3.8	+ 3	2.8	- 26
25-44	13	14	+ 8	13	- 7	12	- 8
45-64	129	123	- 5	109	- 11	98	- 10
65-74	685	677	- 1	594	- 12	529	- 11
75 and over	2,036	2,174	+ 7	2,192	+ 1	2,176	- 1

Mortality from diseases of the central nervous system as a whole does not change consistently for any age-group (Table C37(D)), although there is a tendency to improvement, especially in the younger age-groups where the rates for epilepsy have decreased. In adult life mortality in this section is dominated by deaths from vascular lesions. Among middle-aged and retired people the rates for cerebro-vascular lesions have tended to fall since 1955, particularly in females. Rates for the aged, however, show no improvement.

Table C37(E). Diseases of the circulatory system (ICD Nos. 400-468)

Age	1950	1955		1960		1965	
	Rate	Rate	Percentage change since 1950	Rate	Percentage change since 1955	Rate	Percentage change since 1960
				MALES			
1-4	1.6	*0.89*	- 44	*0.56*	- 37	*1.1*	+ 96
5-14	5.4	1.2	- 78	1.2	0	0.60	- 50
15-24	9.3	6.6	- 29	4.1	- 38	3.4	- 17
25-44	38	39	+ 3	44	+ 13	51	+ 16
45-64	448	446	0	495	+ 11	567	+ 15
65-74	2,102	2,083	- 1	2,073	0	2,070	0
75 and over	6,381	6,431	+ 1	5,862	- 9	5,647	- 4
				FEMALES			
1-4	*0.81*	*0.94*	+ 16	*1.0*	+ 6	*0.94*	- 6
5-14	4.5	2.0	- 56	0.89	- 56	0.60	- 33
15-24	9.1	5.2	- 43	2.7	- 48	2.4	- 11
25-44	30	22	- 27	20	- 9	19	- 5
45-64	227	197	- 13	191	- 3	194	+ 2
65-74	1,371	1,236	- 10	1,155	- 7	1,108	- 4
75 and over	5,593	5,214	- 7	4,796	- 8	4,414	- 8

Table C37(E) shows the changes in the death rates from diseases of the circulatory system over the past fifteen years. There has been little definite change in the rates for pre-school children. Rheumatic heart disease has dwindled to one death in 1965, and with congenital heart disease classified elsewhere, the

remainder of the 33 deaths in 1965 amongst pre-school children are very ill-defined. School children and young adults fare much better, their rates being reduced by 70 per cent or more over the past fifteen years due largely to the disappearance of rheumatic fever and its sequelae. Female adult rates also improve, although to a lesser extent, since they are old enough to include hearts damaged by rheumatism before the conquest of the streptococcus. The rates for male adults show an accelerated rise over the past fifteen years, the rate for coronary heart disease increasing from 15 per 100,000 in 1950 to 37 per 100,000 in 1965. A similar pattern is observed for middle-aged men, and the rate for middle-aged women shows a slight increase in the last five years as the effect of coronary disease is increasingly felt. For the retired and the aged the effect of the reduction in the mortality of chronic rheumatic heart disease is less pronounced and is overshadowed by the much larger proportion of deaths due to arteriosclerosis. The overall rates change little at these ages and trends within the diagnostic groups possibly reflect semantic rather than pathological changes.

Table C37(F). Respiratory diseases (ICD Nos. 470-527)

Age	1950	1955		1960		1965	
	Rate	Rate	Percentage change since 1950	Rate	Percentage change since 1955	Rate	Percentage change since 1960
				MALES			
1-4	30	21	- 30	23	+ 10	19	- 17
5-14	6.0	3.6	- 40	4.0	+ 11	3.1	- 22
15-24	5.6	4.6	- 18	4.2	- 9	3.9	- 7
25-44	18	13	- 28	11	- 15	9.5	- 14
45-64	188	183	- 3	155	- 15	157	+ 1
65-74	681	782	+ 15	747	- 4	822	+ 10
75 and over	1,572	1,846	+ 17	1,905	+ 3	2,313	+ 21
				FEMALES			
1-4	28	19	- 32	17	- 11	19	+ 12
5-14	4.9	3.9	- 20	2.5	- 36	3.1	+ 24
15-24	5.6	3.3	- 41	2.5	- 24	2.1	- 16
25-44	12	8.1	- 32	6.3	- 22	7.4	+ 17
45-64	59	51	- 14	44	- 14	46	+ 5
65-74	295	276	- 6	222	- 20	240	+ 8
75 and over	1,156	1,144	- 1	1,029	- 10	1,177	+ 14

The changing mortality due to non-tubercular respiratory disease is illustrated in Table C37(F). For females of all age-groups the rates in 1955 were less than in 1950, the improvements being more marked at ages below 65 than in those above. The rates in 1960 were again lower, but the rates in 1965 were above the 1960 level for all except the young adults. The rates for males were lower in 1955 than in 1950 in all but the two oldest age-groups but the improvements in 1960 were less consistent with some deterioration in the rates for children. By 1965 the general improvement in the rates for males under 45 was resumed.

The majority of deaths classified as due to respiratory disease are due to pneumonia and its sequelae, and to the syndrome complex associated with the term bronchitis. Improvements in this field have resulted from the increasing control of bacterial infection by the use of antibiotic drugs. It is not surprising therefore that the improvements are most consistently seen for the clear-cut diagnosis of lobar pneumonia which is most likely to have a specific bacterial

aetiology. The more diffuse diagnosis of bronchopneumonia is not so consistently reduced in frequency in young children but tends to increase in old people.

The changes in death rates due to bronchitis are more variable. There was a general improvement in females between 1950 and 1960 with some reversal in the 1965 rates. The rates for males fluctuate considerably with a general trend to deterioration.

Table C37(G). Diseases of the digestive system (ICD Nos. 530-587)

Age	1950	1955		1960		1965	
	Rate	Rate	Percentage change since 1950	Rate	Percentage change since 1955	Rate	Percentage change since 1960
				MALES			
1-4	11	8.5	- 23	6.8	- 20	5.9	- 13
5-14	3.7	2.1	- 43	2.1	0	1.8	- 14
15-24	4.0	3.0	- 25	2.3	- 23	1.6	- 30
25-44	13	8.2	- 37	6.2	- 24	5.3	- 15
45-64	66	53	- 20	42	- 21	35	- 17
65-74	174	188	+ 8	159	- 15	132	- 17
75 and over	290	354	+ 22	348	- 2	345	- 1
				FEMALES			
1-4	9.5	6.6	- 31	5.7	- 14	5.1	- 11
5-14	2.9	1.6	- 45	1.7	+ 6	1.3	- 24
15-24	3.0	2.2	- 27	1.6	- 27	1.5	- 6
25-44	6.9	5.9	- 14	4.0	- 32	3.9	- 2
45-64	34	28	- 18	24	- 14	22	- 8
65-74	102	105	+ 3	94	- 10	85	- 10
75 and over	216	235	+ 9	257	+ 9	254	- 1

The death rates from diseases of the digestive system (Table C37(G)) were lower in 1965 than in 1950 at all age-groups below 75 in both sexes. The improvement was present in 1955 in persons under 65, whilst the rates for the retired did not fall until later in the decade. The rates for old people have if anything deteriorated in the past 15 years but with some flattening out especially in females.

The improvements in children are seen in gastro-enteritis and also in appendicitis, the rates for which are also falling steadily in young adults. In adults there was marked improvement in the rates for ulcerative colitis particularly between 1955 and 1960. In adult life there has been a remarkable reduction in the mortality from peptic ulcer, the change beginning earlier in the younger age-groups but despite the differing incidence in both sexes, the proportionate improvements are of the same order in males and females.

There have been significant improvements in the death rates for abdominal hernia in the two older age-groups, especially in males. In the case of other causes of intestinal obstruction, mortality has dropped in all male age-groups under 75 although not all are statistically significant, whilst the rates for the aged females have risen significantly. The mortality rate for diseases of the liver, gall-bladder and pancreas has dropped significantly in middle-aged women and increased in elderly men.

Table C37(H). Genito-urinary diseases (ICD Nos. 590-637)

Age	1950	1955		1960		1965	
	Rate	Rate	Percentage change since 1950	Rate	Percentage change since 1955	Rate	Percentage change since 1960
				MALES			
1-4	2.4	1.9	- 21	*1.3*	- 32	*0.66*	- 49
5-14	2.5	1.5	- 40	1.5	0	0.83	- 45
15-24	4.3	4.9	+ 14	3.3	- 33	3.2	- 3
25-44	8.5	7.3	- 14	6.2	- 15	4.9	- 21
45-64	36	27	- 25	21	- 22	18	- 14
65-74	199	147	- 26	115	- 22	83	- 28
75 and over	705	592	- 16	496	- 16	373	- 25
				FEMALES			
1-4	2.3	*1.3*	- 43	*1.2*	- 8	0.57	- 52
5-14	2.7	1.8	- 33	1.1	- 39	1.3	+ 18
15-24	4.5	2.8	- 38	2.3	- 18	1.7	- 26
25-44	8.4	6.6	- 21	4.5	- 32	3.9	- 13
45-64	24	18	- 25	16	- 11	14	- 12
65-74	68	52	- 24	44	- 15	42	- 5
75 and over	140	113	- 19	110	- 3	126	+ 15

There has been considerable improvement in the mortality rates from diseases of the genito-urinary system over the past fifteen years (Table C37(H)). The reduction in death rate is not quite uniform over the sex-age groups; proportionately both sexes fare equally well in childhood, but in adult life the improvement is noticeably greater for females than males.

Under 65 years of age the predominant cause of death in this group of diseases is nephritis and nephrosis, and it is in mortality from these causes that the proportionate decrease in rate is less for males than females in adults under 45 years.

Mortality from kidney disease in this group other than nephritis and nephrosis, chiefly infections and obstructions, is rising sharply in both sexes over the age of 75, less consistently in adult males and females. This is possibly due to the fact that chronic bacterial infections of the urinary tract are associated with mechanical defects which make them less susceptible to antibacterial therapy. The genito-urinary surgeons have, however, reduced the mortality from diseases of the male genital organs, chiefly prostatic hypertrophy in males aged 45 years and over, by more than 50 per cent over the past 15 years. Similar reductions have been achieved by the gynaecologists in mortality from diseases of the female genital organs in all adult women except the oldest age-group.

Table C37(J). Accidents, poisonings, and violence (ICD Nos. E800-E999)

Age	1950	1955		1960		1965	
	Rate	Rate	Percentage change since 1950	Rate	Percentage change since 1955	Rate	Percentage change since 1960
				MALES			
1-4	27	23	- 15	23	0	25	+ 9
5-14	20	20	0	18	- 10	19	+ 6
15-24	47	56	+ 19	66	+ 18	67	+ 2
25-44	42	45	+ 7	46	+ 2	47	+ 2
45-64	67	67	0	69	+ 3	65	- 6
65-74	112	124	+ 11	107	- 14	104	- 3
75 and over	245	317	+ 29	306	- 3	284	- 7
				FEMALES			
1-4	20	19	- 5	14	- 26	17	+ 21
5-14	8.8	7.8	- 11	7.9	+ 1	7.8	- 1
15-24	8.0	8.9	+ 11	12	+ 35	15	+ 25
25-44	10	12	+ 20	15	+ 25	17	+ 13
45-64	27	30	+ 11	35	+ 17	35	0
65-74	61	77	+ 26	78	+ 1	77	- 1
75 and over	270	313	+ 16	308	- 2	287	- 7

A less encouraging story is told by Table C37(J) which summarises the changes in mortality rates from accidents, poisonings, and violence. Apart from trivial improvements in children and middle-aged and elderly males, the rates are considerably increased over the fifteen year period. The increases are proportionately greater in females than males and in younger rather than older adults. These increases are the more distressing because they represent deaths many of which could be prevented by social measures and which do not await major discoveries in medical science as is the case with non-infectious diseases.

Table C38. Percentage change in death rates due to accidents and violence, by sex and age, since 1950, England and Wales

Cause of death	Age (in years)													
	1-		5-		15-		25-		45-		65-		75 and over	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Motor vehicle traffic accidents (E810-E825)	- 18	- 16	+ 3	- 2	+ 105	+ 185	+ 31	+ 100	+ 67	+ 110	+ 43	+ 126	+ 61	+ 65
Accidental falls (E900-E904)	+ 42	0	- 12	- 60	- 38	+ 41	- 12	- 14	+ 7	- 7	+ 6	- 4	+ 12	- 3
Accidental drowning and submersion (E929)	- 34	- 50	- 30	- 33	- 24	- 50	- 29	+ 7	- 19	- 48	- 51	- 12	- 72	- 25
Suicide and self-inflicted injury (E970-E979)	-	-	-	-	+ 37	+ 53	+ 34	+ 60	- 15	+ 14	- 31	+ 27	- 26	+ 27

The percentage changes in the major categories of violent death over the period are shown in Table C38. This demonstrates that the increases are due mainly to road traffic accidents and, in the case of females and younger males, suicide.

Table C39. Death rates per 100,000 living from principal causes, by sex and age, 1950, 1955, 1960 and 1965, England and Wales

Cause and ICD No.	Age 1–4 years							
	1950		1955		1960		1965	
	Males	Females	Males	Females	Males	Females	Males	Females
Infective and parasitic diseases (001–138)								
Tuberculosis (001–019)	16	16	2.3	2.7	*0.56*	*0.51*	*0.36*	*0.44*
Tuberculosis of meninges and CNS (010)	11	12	*1.3*	1.6	*0.35*	*0.29*	*0.24*	*0.31*
Measles (085)	4.6	3.0	3.4	4.1	*0.70*	*0.66*	1.3	2.0
Acute poliomyelitis (080)	4.5	3.1	*1.1*	*0.55*	*0.07*	*0.15*	–	*0.06*
Remainder of 001–138	10	11	6.3	6.2	3.6	3.8	2.9	2.9
All infective and parasitic diseases (001–138)	36	33	13	14	4.9	5.1	4.8	5.7
Neoplasms (140–239)								
Kidney (180)	1.8	1.4	*1.3*	*1.4*	*1.3*	*1.2*	*1.1*	*1.0*
Leukaemia and aleukaemia (204)	5.0	4.3	4.4	5.8	4.9	4.6	4.3	4.0
Brain, malignant (193)	1.3	1.4	2.1	2.0	2.0	2.2	2.3	2.1
Brain, non-malignant (223,237)	*0.58*	*0.88*	*0.67*	*0.78*	*0.63*	*0.37*	*0.42*	*0.57*
Remainder of 140–239	3.6	2.9	3.8	2.2	2.2	2.1	2.7	1.8
All neoplasms (140–239)	12	11	12	12	11	10	11	9.4
Diseases of the nervous system and sense organs (330–398)								
Meninges, except meningococcal and tuberculosis (340)	2.0	1.8	2.1	*1.1*	2.2	*1.4*	1.5	1.3
Encephalitis, myelitis and encephalomyelitis (except acute infectious) (343)	*0.90*	*0.34*	*0.52*	*0.31*	*0.49*	*1.0*	*0.30*	*0.31*
Cerebral spastic infantile paralysis (351)	*0.71*	*0.47*	*0.82*	*1.0*	*0.83*	*0.81*	*0.54*	*0.31*
Epilepsy (353)	*1.0*	2.3	1.6	1.6	1.7	1.6	1.2	1.5
Remainder of 330–398	3.4	2.9	2.0	2.0	2.7	2.1	2.6	1.9
All diseases of the nervous system and sense organs (330–398)	8.0	7.9	7.1	6.1	7.9	7.0	6.2	5.3
Diseases of the circulatory system (400–468)								
All diseases of the circulatory system (400–468)	1.6	*0.81*	*0.89*	*0.94*	*0.56*	*1.0*	*1.1*	*0.94*
Diseases of the respiratory system (470–527)								
Lobar pneumonia (490)	2.5	1.9	*1.1*	*1.2*	*0.70*	*0.81*	*0.78*	*0.50*
Bronchopneumonia (491)	17	18	11	11	12	10	9.4	11
Acute bronchitis (500)	2.5	2.3	2.9	*1.5*	3.1	2.2	3.5	2.0
Chronic bronchitis (502)	*0.26*	*0.07*	*0.67*	*0.23*	*0.56*	*0.07*	*0.12*	*0.13*
Remainder of 470–527	8.1	6.0	5.0	5.1	6.7	3.6	5.0	5.5
All diseases of the respiratory system (470–527)	30	28	21	19	23	17	19	19
Diseases of the digestive system (530–587)								
Appendicitis (550–553)	3.1	2.6	*1.2*	*0.70*	*0.76*	*0.81*	*0.78*	*0.44*
Gastro-enteritis and colitis except ulcerative (571)	4.6	3.5	4.1	2.5	4.0	2.5	2.8	2.5
Remainder of 530–587	3.6	3.5	3.3	3.4	2.1	2.4	2.3	2.1
All diseases of the digestive system (530–587)	11	9.5	8.5	6.6	6.8	5.7	5.9	5.1

Table C39 - *(continued)*

Cause and ICD No.	Age 1-4 years							
	1950		1955		1960		1965	
	Males	Females	Males	Females	Males	Females	Males	Females
Diseases of the genito-urinary system (590-637)								
Nephritis and Nephrosis (590-594)	1.8	1.8	*1.4*	*0.94*	*0.76*	*0.73*	*0.42*	*0.25*
Remainder of 590-637	*0.58*	*0.47*	*0.52*	*0.39*	*0.49*	*0.44*	*0.24*	*0.31*
All diseases of the genito-urinary system (590-637)	2.4	2.3	1.9	*1.3*	*1.3*	*1.2*	*0.66*	*0.57*
Congenital malformations (750-759)								
Congenital malformations of circulatory system (754)	3.8	4.7	5.9	5.9	5.8	6.2	4.9	4.3
Remainder of 750-759	4.5	5.8	6.1	8.0	7.1	6.2	4.8	5.9
All congenital malformations (750-759)	8.3	10	12	14	13	12	9.7	10
All other diseases (remainder 001-795)								
All other diseases (rem. 001-795)	5.7	4.1	3.5	4.4	3.4	4.4	4.2	3.6
All accidents, poisonings, and violence (E800-E999)								
Motor vehicle traffic accidents (E810-E825)	10	7.0	7.6	6.9	7.6	4.9	8.2	5.9
Accidental falls (E900-E904)	*1.2*	*1.1*	*1.1*	*1.1*	*1.3*	*0.88*	1.7	*1.1*
Accident caused by fire and explosion of combustible material (E916)	1.4	3.0	*1.1*	3.7	1.8	2.7	3.3	3.4
Accidental drowning and submersion (E929)	6.5	2.2	4.8	1.6	5.8	1.5	4.3	*1.1*
Remainder of E800-E999	8.1	7.0	8.5	6.0	6.8	4.1	7.0	5.3
All accidents, poisonings, and violence (E800-E999)	27	20	23	19	23	14	25	17
All causes	**142**	**127**	**104**	**97**	**95**	**78**	**87**	**76**

Table C39 - *(continued)*

Cause and ICD No.	Age 5–14 years							
	1950		1955		1960		1965	
	Males	Females	Males	Females	Males	Females	Males	Females
Infective and parasitic diseases (001–138)								
Tuberculosis of meninges and CNS (010)	3.2	3.1	*0.44*	*0.42*	*0.06*	*0.12*	*0.03*	*0.06*
Other tuberculosis (001–009, 011–019)	1.8	1.8	*0.20*	*0.55*	*0.03*	*0.12*	*0.03*	*0.03*
Acute poliomyelitis (080,081)	2.7	2.5	0.84	0.64	*0.08*	*0.06*	–	*0.03*
Measles (085)	0.70	*0.35*	0.58	*0.36*	–	*0.12*	*0.49*	*0.27*
Infectious encephalitis (082, 083)	*0.17*	*0.24*	*0.17*	*0.15*	*0.25*	*0.18*	*0.14*	*0.15*
Meningococcal infections (057)	*0.37*	*0.21*	*0.20*	*0.27*	*0.03*	*0.18*	*0.09*	*0.09*
Remainder of 001–138	2.4	1.3	0.84	0.67	1.0	0.65	*0.52*	*0.27*
All infective and parasitic diseases (001–138)	11	9.5	3.3	3.1	1.4	1.4	1.3	0.91
Neoplasms (140–239)								
Kidney (180)	*0.07*	*0.35*	*0.35*	*0.42*	*0.23*	*0.41*	*0.37*	*0.15*
Leukaemia and aleukaemia (204)	2.4	2.4	2.6	2.3	3.6	2.4	3.3	2.7
Brain, malignant (193)	1.3	1.1	1.6	1.1	2.0	1.2	2.2	1.5
Brain, non-malignant (223,237)	0.66	*0.59*	0.64	0.88	*0.14*	*0.47*	*0.26*	*0.24*
Remainder of 140–239	2.6	2.0	2.5	1.5	2.3	2.1	2.8	1.6
All neoplasms (140–239)	7.0	6.4	7.6	6.1	8.2	6.6	9.0	6.2
Diseases of the nervous system and sense organs (330–398)								
Vascular lesions affecting central nervous system (330–334)	*0.46*	*0.14*	*0.52*	*0.27*	0.65	*0.44*	*0.55*	*0.57*
Cerebral spastic infantile paralysis (351)	*0.20*	*0.14*	*0.20*	*0.39*	*0.31*	*0.24*	*0.26*	*0.24*
Epilepsy (353)	1.0	1.1	1.0	0.94	0.76	0.89	0.78	0.63
Remainder of 330–398	1.6	1.2	1.3	1.5	1.0	0.89	1.4	0.85
All diseases of the nervous system and sense organs (330–398)	3.2	2.5	3.0	3.1	2.7	2.4	3.0	2.3
Diseases of the circulatory system (400–468)								
Rheumatic fever (400–402)	2.7	2.3	*0.41*	0.88	*0.23*	*0.21*	*0.06*	*0.09*
Chronic rheumatic heart disease (410–416)	1.4	1.5	*0.46*	*0.36*	*0.11*	*0.12*	*0.09*	*0.03*
Remainder of 400–468	1.4	*0.66*	*0.35*	0.79	0.85	*0.56*	*0.46*	*0.48*
All diseases of the circulatory system (400–468)	5.4	4.5	1.2	2.0	1.2	0.89	0.60	0.60
Diseases of the respiratory system (470–527)								
Lobar pneumonia (490)	*0.46*	0.79	*0.35*	*0.39*	*0.37*	*0.15*	*0.06*	*0.09*
Bronchopneumonia (491)	2.7	1.7	1.5	1.6	2.0	1.2	1.4	1.9
Bronchitis (500–502)	0.80	*0.45*	0.58	*0.36*	0.56	*0.32*	0.60	*0.39*
Remainder of 470–527	2.1	1.9	1.2	1.5	1.0	0.83	0.98	0.69
All diseases of the respiratory system (470–527)	6.0	4.9	3.6	3.9	4.0	2.5	3.1	3.1

Table C39 - *(continued)*

Cause and ICD No.	Age 5-14 years							
	1950		1955		1960		1965	
	Males	Females	Males	Females	Males	Females	Males	Females
Diseases of the digestive system (530-587)								
Appendicitis (550-553)	2.4	1.6	1.1	0.70	0.90	*0.47*	*0.49*	*0.42*
Gastro-enteritis and colitis except ulcerative (571)	*0.27*	*0.17*	*0.15*	*0.18*	*0.23*	*0.24*	*0.20*	-
Remainder of 530-587	1.0	1.1	0.87	0.76	1.0	0.97	1.2	0.88
All diseases of the digestive system (530-587)	3.7	2.9	2.1	1.6	2.1	1.7	1.8	1.3
Diseases of the genito-urinary system (590-637)								
Nephritis and nephrosis (590-594)	2.2	2.5	1.3	1.4	1.2	0.80	*0.55*	0.85
Remainder of 590-637	*0.30*	*0.21*	*0.17*	*0.39*	*0.34*	*0.32*	*0.29*	*0.45*
All diseases of the genito-urinary system (590-637)	2.5	2.7	1.5	1.8	1.5	1.1	0.83	1.3
Congenital malformations (750-759)								
Congenital malformations of circulatory system (754)	2.1	1.3	1.5	1.7	2.4	2.4	2.2	2.4
Remainder of 750-759	1.3	1.0	1.2	0.91	1.2	1.3	1.4	1.2
All congenital malformations (750-759)	3.4	2.3	2.7	2.6	3.6	3.8	3.7	3.6
All other diseases (remainder 001-795)								
All other diseases (rem. 001-795)	2.8	2.5	2.6	2.2	2.0	1.5	3.2	2.5
All accidents, poisonings, and violence (E800-E999)								
Motor vehicle accidents (E810-E825)	9.4	4.8	8.1	3.6	8.1	4.1	9.7	4.7
Accidental falls (E900-E904)	1.6	*0.38*	1.5	*0.46*	1.2	*0.35*	1.4	*0.15*
Accident caused by fire and explosion of combustible material (E916)	*0.40*	1.1	0.58	1.5	*0.31*	1.1	0.69	1.0
Accidental drowning and submersion (E929)	5.0	0.90	4.9	0.79	4.2	0.89	3.5	0.60
Remainder of E800-E999	4.0	1.6	4.5	1.4	4.5	1.4	3.6	1.4
All accidents, poisonings, and violence (E800-E999)	20	8.8	20	7.8	18	7.9	19	7.8
All causes	**66**	**47**	**47**	**34**	**45**	**30**	**45**	**30**

Table C39 - *(continued)*

Cause and ICD No.	Age 15-24 years							
	1950		1955		1960		1965	
	Males	Females	Males	Females	Males	Females	Males	Females
Infective and parasitic diseases (001-138)								
Tuberculosis respiratory (001-008)	16	32	1.9	3.4	*0.17*	*0.27*	*0.14*	*0.18*
Tuberculosis of meninges and CNS (010)	2.0	3.1	*0.33*	*0.21*	*0.07*	*0.24*	*0.06*	*0.12*
Other tuberculosis (011-019)	2.5	2.2	0.88	*0.32*	*0.17*	*0.03*	*0.09*	-
Acute poliomyelitis (080,081)	3.0	2.8	0.99	0.75	*0.30*	*0.13*	*0.03*	*0.09*
Remainder of 001-138	1.7	1.4	1.1	*0.68*	0.74	0.74	0.74	0.85
All infective and parasitic diseases (001-138)	25	41	5.2	5.4	1.4	1.4	1.1	1.2
Neoplasms (140-239)								
Bone (196)	1.7	0.81	0.88	*0.43*	1.1	0.74	1.1	0.65
Hodgkin's disease (201)	1.1	*0.56*	1.5	0.86	1.7	0.84	1.5	0.88
Leukaemia and aleukaemia (204)	2.5	1.6	2.5	1.6	2.5	1.6	2.2	1.9
Brain, malignant (193)	0.81	0.76	0.95	0.86	0.90	0.74	1.6	0.73
Brain, non-malignant (223,237)	*0.67*	0.69	0.77	*0.68*	*0.50*	*0.37*	*0.29*	*0.41*
Remainder of 140-239	4.0	2.7	4.2	2.9	3.8	2.4	3.7	3.3
All neoplasms (140-239)	11	7.1	11	7.2	10	6.7	10	7.9
Diseases of the nervous system and sense organs (330-398)								
Vascular lesions affecting central nervous system (330-334)	1.1	1.1	1.6	1.6	1.3	1.2	1.5	1.1
Cerebral spastic infantile paralysis (351)	*0.25*	*0.28*	*0.29*	*0.04*	*0.27*	*0.20*	*0.11*	*0.18*
Epilepsy (353)	3.0	1.8	1.9	1.3	1.4	1.4	1.8	0.85
Remainder of 330-398	2.9	1.4	1.3	0.78	1.3	0.98	1.1	0.68
All diseases of the nervous system and sense organs (330-398)	7.2	4.6	5.1	3.7	4.3	3.8	4.5	2.8
Diseases of the circulatory system (400-468)								
Rheumatic fever (400-402)	1.1	1.4	*0.47*	*0.53*	*0.27*	*0.27*	*0.06*	*0.03*
Chronic rheumatic heart disease (410-416)	5.0	5.6	3.4	2.7	1.6	1.0	0.86	0.59
Remainder of 400-468	3.1	2.1	2.7	2.0	2.3	1.4	2.5	1.8
All diseases of the circulatory system (400-468)	9.3	9.1	6.6	5.2	4.1	2.7	3.4	2.4
Diseases of the respiratory system (470-527)								
Lobar pneumonia (490)	1.2	0.76	*0.47*	*0.53*	*0.50*	*0.34*	*0.49*	*0.24*
Bronchopneumonia (491)	1.5	1.3	1.2	1.0	1.7	0.94	1.5	0.73
Bronchitis (500-502)	*0.46*	0.69	0.95	*0.46*	*0.47*	*0.24*	0.74	*0.32*
Remainder of 470-527	2.5	2.8	2.0	1.3	1.6	0.94	1.2	0.85
All diseases of the respiratory system (470-527)	5.6	5.6	4.6	3.3	4.2	2.5	3.9	2.1
Diseases of the digestive system (530-587)								
Appendicitis (550-553)	1.9	1.0	1.2	*0.43*	*0.57*	*0.37*	*0.31*	*0.18*
Ulcerative colitis (572.2)	*0.32*	0.69	*0.37*	*0.29*	*0.47*	*0.37*	*0.20*	*0.18*
Remainder of 530-587	1.8	1.3	1.4	1.5	1.2	0.84	1.1	1.1
All diseases of the digestive system (530-587)	4.0	3.0	3.0	2.2	2.3	1.6	1.6	1.5

Table C39 - *(continued)*

Cause and ICD No.	Age 15-24 years							
	1950		1955		1960		1965	
	Males	Females	Males	Females	Males	Females	Males	Females
Diseases of the genito-urinary system (590-637)								
Nephritis and nephrosis (590-594)	4.0	3.8	4.5	2.4	2.9	1.8	2.6	1.1
Remainder of 590-637	*0.28*	0.72	*0.40*	*0.43*	*0.40*	*0.47*	0.60	0.62
All diseases of the genito-urinary system (590-637)	4.3	4.5	4.9	2.8	3.3	2.3	3.2	1.7
Deliveries and complications of pregnancy, childbirth and the puerperium (640-689)								
Deliveries and complications of pregnancy, childbirth and the puerperium (640-689)	-	3.8	-	3.2	-	2.1	-	1.7
Congenital malformations (750-759)								
Congenital malformations of the circulatory system (754)	2.3	2.1	2.0	1.3	2.1	1.7	1.5	1.3
Remainder of 750-759	1.2	0.72	1.1	*0.64*	1.1	*0.57*	0.80	*0.56*
All congenital malformations (750-759)	3.5	2.8	3.1	2.0	3.2	2.3	2.3	1.8
All other diseases (remainder 001-795)								
All other diseases (rem. 001-795)	4.7	4.6	4.0	3.5	3.1	2.3	5.1	4.0
All accidents, poisonings, and violence (E800-E999)								
Motor vehicle traffic accidents (E810-E825)	22	3.4	30	5.1	44	7.0	45	9.7
Water transport accidents (E850-E858)	2.1	*0.03*	1.4	*0.04*	1.7	-	1.3	*0.18*
Accidental falls (E900-E904)	2.2	*0.17*	1.9	*0.11*	2.2	*0.27*	1.9	*0.24*
Accidental drowning and submersion (E929)	3.3	*0.24*	4.8	*0.32*	2.5	*0.13*	2.5	*0.12*
Suicide and self-inflicted injury (E970-E979)	4.6	1.7	4.0	1.3	5.7	2.6	6.3	2.6
Remainder of E800-E999	12	2.5	13	2.0	11	2.4	9.9	2.2
All accidents, poisonings, and violence (E800-E999)	47	8.0	56	8.9	66	12	67	15
All causes	**121**	**95**	**103**	**48**	**103**	**40**	**102**	**42**

Table C39 - *(continued)*

Cause and ICD No.	Age 25–44 years							
	1950		1955		1960		1965	
	Males	Females	Males	Females	Males	Females	Males	Females
Infective and parasitic diseases (001–138)								
Tuberculosis, respiratory (001–008)	41	36	12	11	3.8	3.3	1.6	1.3
Tuberculosis, other forms (010–019)	3.4	2.2	1.4	0.85	0.56	0.51	0.45	0.46
Remainder of 001–138	5.8	3.9	3.5	2.5	1.9	1.3	1.1	1.2
All infective and parasitic diseases (001–138)	50	42	17	14	6.2	5.1	3.1	2.9
Neoplasms (140–239)								
Stomach (151)	5.8	3.4	4.2	2.6	3.8	2.4	2.9	2.1
Large Intestine (153)	2.7	3.4	2.5	3.0	2.2	2.6	2.0	2.8
Rectum (154)	1.8	1.4	1.4	1.3	1.3	1.0	1.1	1.2
Lung and Bronchus (162, 163)	9.9	2.5	9.9	2.4	9.4	3.1	9.1	3.1
Breast (170)	*0.05*	13	*0.06*	12	*0.03*	12	*0.03*	13
Cervix Uteri (171)	–	4.6	–	5.2	–	6.7	–	6.0
Ovary, Fallopian tube and broad ligament (175)	–	3.8	–	4.2	–	4.0	–	3.9
Brain, malignant (193)	2.5	1.9	2.7	2.0	3.2	2.2	3.7	2.1
Brain, non-malignant (223,237)	2.0	1.7	1.5	1.4	0.83	0.77	0.96	0.96
Hodgkin's disease (201)	2.1	1.2	2.7	1.2	2.6	1.3	2.5	1.4
Leukaemia and aleukaemia (204)	2.2	2.0	2.8	2.2	3.3	2.0	2.6	2.1
Remainder of 140–239	10	9.8	11	8.8	11	9.1	13	8.5
All neoplasms (140–239)	39	48	39	46	38	47	38	48
Diseases of the nervous system and sense organs (330–398)								
Vascular lesions affecting central nervous system (330–334)	5.9	7.0	7.2	8.6	7.9	8.3	8.0	7.9
Remainder of 330–398	7.6	6.3	6.1	5.3	5.6	4.7	4.9	4.5
All diseases of the nervous system and sense organs (330–398)	14	13	13	14	13	13	13	12
Diseases of the circulatory system (400–468)								
Rheumatic fever (400–402)	0.82	1.0	0.43	0.46	*0.07*	*0.10*	*0.05*	*0.07*
Chronic rheumatic heart disease (410–416)	11	17	8.1	13	6.5	9.8	4.9	7.1
Heart disease specified as involving coronary arteries (420.1)	15	2.2	20	2.8	28	3.5	37	5.5
Hypertension without mention of heart (444–447)	1.7	0.92	2.0	0.96	3.1	1.3	1.8	0.89
Remainder of 400–468	9.8	8.7	8.3	5.3	6.7	5.6	7.3	5.7
All diseases of the circulatory system (400–468)	38	30	39	22	44	20	51	19
Diseases of the respiratory system (470–527)								
Lobar pneumonia (490)	2.5	1.7	1.5	0.91	1.2	0.58	1.0	0.69
Bronchopneumonia (491)	2.9	3.2	2.5	2.2	2.7	2.2	2.4	2.2
Bronchitis (500–502)	4.4	2.3	4.2	2.0	3.5	1.5	3.1	2.2
Remainder of 470–527	7.7	4.6	4.9	3.0	3.5	2.0	2.9	2.3
All diseases of the respiratory system (470–527)	18	12	13	8.1	11	6.3	9.5	7.4

Table C39 - *(continued)*

Cause and ICD No.	Age 25–44 years							
	1950		1955		1960		1965	
	Males	Females	Males	Females	Males	Females	Males	Females
Diseases of the digestive system (530–587)								
Ulcer of stomach (540)	2.5	0.60	1.2	0.50	0.93	0.36	0.45	*0.15*
Ulcer of duodenum (541)	3.3	0.39	2.0	0.39	1.4	*0.21*	0.93	*0.21*
Ulcerative colitis (572.2)	0.79	1.3	0.63	1.1	0.40	0.59	0.37	0.50
Remainder of 530–587	6.1	4.6	4.3	3.9	3.5	2.9	3.5	3.0
All diseases of the digestive system (530–587)	13	6.9	8.2	5.9	6.2	4.0	5.3	3.9
Diseases of the genito-urinary system (590–637)								
Nephritis and nephrosis (590–594)	7.4	6.4	6.2	4.3	5.0	2.6	3.4	1.8
Remainder of 590–637	1.1	2.1	1.1	2.3	1.2	1.9	1.5	2.1
All diseases of the genito-urinary system (590–637)	8.5	8.4	7.3	6.6	6.2	4.5	4.9	3.9
Deliveries and complications of pregnancy, childbirth and the puerperium (640–689)								
Deliveries and complications of pregnancy, childbirth and the puerperium (640–689)	-	7.4	-	5.2	-	4.0	-	2.7
Congenital malformations (750–759)								
Congenital malformations of circulatory system (754)	2.2	1.9	1.4	1.2	1.1	1.1	1.1	0.76
Remainder of 750–759	1.1	0.92	1.0	0.86	1.0	0.56	0.79	0.66
All congenital malformations (750–759)	3.2	2.8	2.4	2.1	2.2	1.6	1.9	1.4
All other diseases (remainder 001–795)								
All other diseases (rem. 001–795)	7.0	9.2	5.8	6.9	4.9	5.2	6.9	7.1
All accidents, poisonings, and violence (E800–E999)								
Motor vehicle traffic accidents (E810–E825)	13	1.8	14	2.4	17	3.7	17	3.6
Water transport accidents (E850–E858)	0.90	-	0.75	*0.02*	0.80	*0.02*	0.63	-
Accidental falls (E900–E904)	3.2	0.42	3.3	0.39	2.6	0.38	2.8	0.36
Accidental drowning and submersion (E929)	1.7	*0.29*	1.7	0.52	1.6	0.39	1.2	*0.31*
Suicide and self-inflicted injury (E970–E979)	9.7	5.5	11	6.0	13	7.2	13	8.8
Remainder of E800–E999	14	2.2	13	2.6	11	3.1	12	3.9
All accidents, poisonings, and violence (E800–E999)	42	10	45	12	46	15	47	17
All causes	**232**	**190**	**189**	**144**	**178**	**126**	**180**	**126**

Table C39 - *(continued)*

Cause and ICD No.	Age 45-64 years							
	1950		1955		1960		1965	
	Males	Females	Males	Females	Males	Females	Males	Females
Infective and parasitic diseases (001-138)								
Tuberculosis, all forms (001-019)	90	25	42	10	21	5.1	12	3.7
Remainder of 001-138	17	7.6	11	5.3	7.3	4.0	5.1	3.5
All infective and parasitic diseases (001-138)	108	32	53	16	28	9.2	17	7.2
Neoplasms (140-239)								
Stomach (151)	61	29	57	26	54	23	50	20
Large intestine (153)	23	27	21	24	20	23	20	22
Rectum (154)	23	13	18	12	16	10	16	11
Breast (170)	0.47	63	0.61	64	0.32	67	0.46	70
Cervix uteri (171)	-	24	-	20	-	19	-	20
Ovary, Fallopian tube and broad ligament (175)	-	24	-	25	-	25	-	27
Prostate (177)	9.3	-	7.2	-	7.8	-	8.9	-
Lung and bronchus (162,163)	125	15	157	18	176	22	186	30
Remainder of 140-239	108	80	105	79	107	78	116	82
All neoplasms (140-239)	349	277	365	268	382	266	398	281
Diseases of the nervous system and sense organs (330-398)								
Vascular lesions affecting central nervous system (330-334)	108	115	111	110	110	96	107	85
Remainder of 330-398	17	14	16	13	14	13	13	12
All diseases of the nervous system and sense organs (330-398)	125	129	127	123	123	109	120	98
Diseases of the circulatory system (400-468)								
Chronic rheumatic heart disease (410-416)	32	44	24	37	21	32	18	28
Heart disease specified as involving coronary arteries (420.1)	251	67	300	78	366	92	451	108
Arteriosclerotic heart disease (422.1)	18	12	12	7.4	6.7	4.4	5.0	3.2
Degenerative heart disease (422.2)	42	32	20	16	9.3	7.7	7.8	5.1
Congestive heart failure (434.1)	4.1	2.3	5.7	3.9	8.0	4.7	6.4	5.1
Hypertensive heart disease (440-443)	37	28	22	15	18	12	16	8.8
Other hypertensive disease (444-447)	11	7.0	17	12	19	9.9	12	5.6
General arteriosclerosis (450)	10	4.7	5.7	3.3	4.3	2.5	4.0	2.3
Remainder of 400-468	42	29	40	25	43	26	47	28
All diseases of the circulatory system (400-468)	448	227	446	197	495	191	567	194

Table C39 - *(continued)*

Cause and ICD No.	Age 45–64 years							
	1950		1955		1960		1965	
	Males	Females	Males	Females	Males	Females	Males	Females
Diseases of the respiratory system (470–527)								
Lobar pneumonia (490)	16	6.2	12	4.8	8.6	3.5	8.4	3.3
Bronchopneumonia (491)	21	13	22	14	21	14	22	15
Bronchitis (500–502)	108	25	110	22	99	18	105	20
Remainder of 470–527	43	15	39	11	27	8.3	22	7.8
All diseases of the respiratory system (470–527)	188	59	183	51	155	44	157	46
Diseases of the digestive system (530–587)								
Ulcer of stomach (540)	18	4.1	12	2.9	7.7	2.4	6.2	2.4
Ulcer of duodenum (541)	18	2.3	15	2.5	9.7	1.8	6.0	1.3
Remainder of 530–587	30	27	27	23	24	20	23	18
All diseases of the digestive system (530–587)	66	34	53	28	42	24	35	22
Diseases of the genito-urinary system (590–637)								
Nephritis and nephrosis (590–594)	21	17	16	12	12	8.1	9.6	5.6
Remainder of 590–637	15	7.4	11	6.7	9.2	7.8	8.2	8.4
All diseases of the genito-urinary system (590–637)	36	24	27	18	21	16	18	14
All other diseases (remainder 001–795)								
All other diseases (rem. 001–795)	38	47	31	36	24	30	28	32
All accidents, poisonings, and violence (E800–E999)								
Motor vehicle traffic accidents (E810–E825)	12	4.1	14	4.3	19	7.9	20	8.6
Accidental falls (E900–E904)	5.9	2.8	6.1	3.1	6.1	2.9	6.3	2.6
Accidental drowning and submersion (E929)	2.7	1.2	2.9	1.1	2.9	1.1	2.2	0.62
Suicide and self-inflicted injury (E970–E979)	26	14	26	17	25	16	22	16
Remainder of E800–E999	20	4.9	19	5.1	17	6.9	15	7.1
All accidents, poisonings, and violence (E800–E999)	67	27	67	30	69	35	65	35
All causes	**1,424**	**858**	**1,353**	**768**	**1,339**	**725**	**1,406**	**730**

Table C39 - *(continued)*

Cause and ICD No.	Age 65-74 years							
	1950		1955		1960		1965	
	Males	Females	Males	Females	Males	Females	Males	Females
Infective and parasitic diseases (001-138)								
Tuberculosis, all forms (001-019)	94	24	73	13	52	9.5	35	6.7
Remainder of 001-138	24	15	32	13	22	9.4	18	8.6
All infective and parasitic diseases (001-138)	129	39	105	26	74	19	53	15
Neoplasms (140-239)								
Stomach (151)	209	125	195	106	185	95	170	79
Large intestine (153)	114	98	93	85	78	76	78	77
Rectum (154)	102	45	76	38	72	38	64	34
Breast (170)	1.4	105	1.4	106	1.6	105	2.0	104
Cervix uteri(171)	-	34	-	31	-	28	-	22
Ovary, Fallopian tube and broad ligament (175)	-	33	-	33	-	34	-	38
Prostate (177)	91	-	92	-	91	-	84	-
Lung and bronchus (162,163)	203	34	331	39	433	46	530	59
Remainder of 140-239	324	207	332	201	317	207	330	211
All neoplasms (140-239)	1,044	680	1,111	639	1,178	628	1,257	624
Diseases of the nervous system and sense organs (330-398)								
Vascular lesions affecting central nervous system (330-334)	702	642	714	638	673	559	642	497
Remainder of 330-398	51	43	50	38	41	35	43	32
All diseases of the nervous system and sense organs (330-398)	753	685	764	677	714	594	684	529
Diseases of the circulatory system (400-468)								
Chronic rheumatic heart disease (410-416)	74	87	49	61	37	52	29	47
Heart disease specified as involving coronary arteries (420.1)	872	412	1,077	478	1,296	569	1,455	636
Arteriosclerotic heart disease (422.1)	253	181	196	139	130	89	81	59
Degenerative heart disease (422.2)	384	319	238	184	119	95	70	59
Congestive heart failure (434.1)	18	12	42	26	53	38	53	41
Hypertensive heart disease (440-443)	204	154	148	121	112	93	78	68
Other hypertensive disease (444-447)	43	32	86	66	58	40	37	27
General arteriosclerosis (450)	116	66	89	53	64	44	61	34
Remainder of 400-468	138	108	158	108	204	135	207	137
All diseases of the circulatory system (400-468)	2,102	1,371	2,083	1,236	2,073	1,155	2,070	1,108

Table C39 - *(continued)*

Cause and ICD No.	Age 65–74 years							
	1950		1955		1960		1965	
	Males	Females	Males	Females	Males	Females	Males	Females
Diseases of the respiratory system (470–527)								
Lobar pneumonia (490)	46	23	43	20	32	16	34	15
Bronchopneumonia (491)	98	64	134	85	147	87	170	109
Bronchitis (500–502)	430	158	487	132	467	92	531	92
Remainder of 470–527	108	49	119	38	100	27	88	25
All diseases of the respiratory system (470–527)	681	295	782	276	747	222	822	240
Diseases of the digestive system (530–587)								
Ulcer of stomach (540)	46	20	48	15	34	12	26	9.0
Ulcer of duodenum (541)	37	6.0	50	9.1	38	7.3	27	6.4
Remainder of 530–587	91	81	91	81	88	75	80	70
All diseases of the digestive system (530–587)	174	102	188	105	159	94	132	85
Diseases of the genito-urinary system (590–637)								
Nephritis and nephrosis (590–594)	59	49	40	29	28	19	22	14
Remainder of 590–637	140	19	107	23	87	25	62	29
All diseases of the genito-urinary system (590–637)	199	68	147	52	115	44	83	42
All other diseases (remainder 001–795)								
All other diseases (rem. 001–795)	139	168	118	146	93	114	92	115
All accidents, poisonings, and violence (E800–E999)								
Motor vehicle traffic accidents (E810–E825)	23	8.4	27	12	30	17	33	19
Accidental falls (E900–E904)	18	23	25	28	21	26	19	22
Accidental drowning and submersion (E929)	7.2	1.6	5.3	2.5	4.3	1.6	3.5	1.4
Suicide and self-inflicted injury (E970–E979)	42	15	42	20	33	19	29	19
Remainder of E800–E999	22	12	25	15	19	15	20	16
All accidents, poisonings, and violence (E800–E999)	112	61	124	77	107	78	104	77
All causes	**5,333**	**3,470**	**5,422**	**3,234**	**5,261**	**2,947**	**5,299**	**2,835**

Table C39 - *(continued)*

Cause and ICD No.	Age 75 years and over							
	1950		1955		1960		1965	
	Males	Females	Males	Females	Males	Females	Males	Females
Infective and parasitic diseases (001-138)								
Tuberculosis, all forms (001-019)	44	18	45	15	45	12	39	9.4
Remainder of 001-138	38	23	36	20	29	17	27	20
All infective and parasitic diseases (001-138)	82	41	81	35	75	28	66	29
Neoplasms (140-239)								
Stomach (151)	289	236	313	216	285	202	270	175
Large intestine (153)	235	237	212	202	182	178	170	162
Rectum (154)	177	89	166	76	151	75	141	73
Breast (170)	3.1	168	3.2	165	2.9	161	3.3	161
Cervix uteri (171)	-	38	-	32	-	36	-	29
Ovary, Fallopian tube and broad ligament (175)	-	28	-	33	-	36	-	34
Prostate (177)	226	-	258	-	279	-	317	-
Lung and bronchus (162,163)	120	33	213	40	334	50	433	59
Remainder of 140-239	547	318	556	326	546	350	563	374
All neoplasms (140-239)	1,597	1,146	1,720	1,090	1,779	1,088	1,896	1,068
Diseases of the nervous system and sense organs (330-398)								
Vascular lesions affecting central nervous system (330-334)	1,929	1,959	2,281	2,107	2,149	2,125	2,186	2,109
Remainder of 330-398	96	77	81	67	76	67	85	67
All diseases of the nervous system and sense organs (330-398)	2,025	2,036	2,362	2,174	2,225	2,192	2,271	2,176
Diseases of the circulatory system (400-468)								
Chronic rheumatic heart disease (410-416)	126	160	69	94	50	76	45	64
Heart disease specified as involving coronary arteries (420.1)	1,372	824	1,796	1,043	2,219	1,328	2,662	1,573
Arteriosclerotic heart disease (422.1)	1,294	1,156	1,229	1,051	897	876	660	651
Degenerative heart disease (422.2)	2,119	2,218	1,683	1,645	1,040	1,043	712	733
Congestive heart failure (434.1)	50	44	140	104	204	170	246	213
Hypertensive heart disease (440-443)	439	391	366	343	295	307	194	214
Other hypertensive disease (444-447)	131	99	248	199	155	149	106	95
General Arteriosclerosis (450)	589	461	578	460	509	417	492	421
Remainder of 400-468	262	239	322	275	492	431	530	449
All diseases of the circulatory system (400-468)	6,381	5,593	6,431	5,214	5,862	4,796	5,647	4,414

Table C39 - *(continued)*

Cause and ICD No.	Age 75 years and over							
	1950		1955		1960		1965	
	Males	Females	Males	Females	Males	Females	Males	Females
Diseases of the respiratory system (470–527)								
Lobar pneumonia (490)	79	57	89	57	80	56	95	56
Bronchopneumonia (491)	339	299	567	444	709	536	961	720
Bronchitis (500–502)	938	620	953	477	917	327	1,040	296
Remainder of 470–527	217	180	237	165	198	110	217	105
All diseases of the respiratory system (470–527)	1,572	1,156	1,846	1,144	1,905	1,029	2,313	1,177
Diseases of the digestive system (530–587)								
Ulcer of stomach (540)	59	31	80	41	75	44	68	40
Ulcer of duodenum (541)	41	11	78	20	74	21	67	21
Remainder of 530–587	190	174	196	173	199	192	210	193
All diseases of the digestive system (530–587)	290	216	354	235	348	257	345	254
Diseases of the genito-urinary system (590–637)								
Nephritis and nephrosis (590–594)	143	99	87	62	69	44	50	35
Remainder of 590–637	562	41	505	50	427	67	323	90
All diseases of the genito-urinary system (590–637)	705	140	592	113	496	110	373	126
Symptoms, senility and ill-defined conditions (780–795)								
Senility without mention of psychosis (794)	547	594	465	483	316	358	186	213
Ill-defined and unknown causes of mortality (795)	*0.66*	*0.21*	*0.31*	*0.18*	*0.15*	*0.31*	*0.43*	*0.28*
Remainder of 780–795	6.1	4.0	8.4	3.8	9.0	6.0	8.9	4.9
Symptoms, senility and ill-defined conditions (780–795)	554	598	472	487	325	364	195	218
All other diseases (remainder 001–795)								
All other diseases (rem.001–795)	224	284	205	267	196	266	218	282
All accidents, poisonings, and violence (E800–E999)								
Motor vehicle traffic accidents (E810–E825)	44	20	53	23	67	31	71	33
Accidental falls (E900–E904)	114	199	157	226	142	219	128	194
Accidental drowning and submersion (E929)	12	*2.0*	8.7	*1.3*	7.1	1.6	3.4	1.5
Suicide and self-inflicted injury (E970–E979)	42	11	46	13	38	12	31	14
Remainder of E800–E999	34	37	51	50	51	45	50	44
All accidents, poisonings, and violence (E800–E999)	245	270	317	313	306	308	284	287
All causes	**13,676**	**11,480**	**14,380**	**11,071**	**13,516**	**10,438**	**13,608**	**10,030**

Asthma and Other allergic disorders

There has been an increase in deaths assigned to asthma (ICD No. 241) over the past six years or so.

Table C40. Deaths due to asthma, by sex and age, 1959 to 1965, England and Wales

Year		All ages	0-	5-	10-	15-	25-	35 and over
1959	M	534	14	4	5	15	22	474
	F	680	11	2	7	28	40	592
1960	M	516	14	6	7	25	29	435
	F	672	15	6	6	19	30	596
1961	M	560	11	4	11	26	33	475
	F	709	20	2	13	26	54	594
1962	M	587	10	2	20	33	42	480
	F	765	11	4	9	38	43	660
1963	M	691	20	7	25	40	60	539
	F	964	17	2	16	52	68	809
1964	M	776	12	17	29	54	59	605
	F	1,024	9	6	24	59	94	832
1965	M	902	21	8	43	75	86	669
	F	1,178	20	10	23	77	81	967

The bulk of these deaths occur in older age-groups. The striking feature is the marked increase (above five fold) in children aged 10-14 years, compared with the lesser increase at other ages. In children under five and persons aged 35 and over the increase has amounted to only sixty per cent or so over the six year period.

Another rather similar increase is also apparent in ICD NO. 245 - Other allergic disorders - but is most prominent in children under the age of five years.

The possibility of these deaths being the result of employment of corticosteroid drugs has been considered. This is under investigation, but the greater interest shown in atopic and allergic diseases may have lead to more deaths being ascribed by certifiers to these categories.

Table C41. Deaths due to Other allergic disorders, 1959 to 1965, England and Wales

Year	All ages	0-	5-	35 and over
1959	8	1	1	6
1960	13	-	2	11
1961	12	1	1	10
1962	27	14	4	9
1963	32	10	3	19
1964	40	11	5	24
1965	29	7	-	22

Fibrocystic disease

Over the past ten years there has been increasing interest in this syndrome which is due to an autosomal recessive gene. Fibrocystic disease of the pancreas, cystic fibrosis, mucoviscidosis and meconium ileus are assigned to part of ICD No. 587.2, but the syndrome also includes fibrocystic disease of the lung ICD No. 759.0 pt.) and fibrocystic disease of the liver (ICD No. 756.2 pt.).

Table C42 shows the number of deaths in 1965, attributed directly or indirectly to any of these conditions, classified by sex and age.

Forty-two per cent of the deaths occur in infants under one year; twenty-one per cent under four weeks. The rate for males is higher than that for females at most ages but the differences are not significant.

Table C42. Deaths associated with fibrocystic disease, 1965, England and Wales

Number of deaths, rates per million live births for ages under 1 year and per million population for ages over 1 year, and percentage of deaths, by sex and age

Age at death	Males			Females			Persons		
	Number	Rate	Per cent of all ages	Number	Rate	Per cent of all ages	Number	Rate	Per cent of all ages
Under 4 weeks	23	52	21	15	36	19	38	44	21
4 weeks and under 3 months	9	20	8	5	12	6	14	16	7
3 months and under 6 months	6	14	6	7	17	9	13	15	7
6 months and under 1 year	9	20	8	5	12	6	14	16	7
Total under 1 year	**47**	**106**	**44**	**32**	**76**	**40**	**79**	**92**	**42**
1-4 years	23	14	21	20	13	25	43	13	23
5-9 years	12	6.6	11	11	6.4	13	23	6.5	12
10-14 years	5	3.0	5	6	3.8	7	11	3.4	6
15 years and over	20	1.1	19	12	0.62	15	32	0.87	17
All ages	**107**	**4.6**	**100**	**81**	**3.3**	**100**	**188**	**3.9**	**100**

Method of certification and place of death

Method of certification of death was analysed by cause of death in the Commentary volume, Part III, until 1964 (reference 1964 - Table C129 on page 187) and the corresponding table now appears as appendix H5 on page 428 of the *Statistical Review*, Part I, of 1965. The number certified in various ways during the past four years is shown below.

Table C43. Number of deaths certified in various ways, 1962 to 1965, England and Wales

	1962	1963	1964	1965
By Coroner:				
Inquest held:				
With post-mortem	20,383	21,175	21,909	21,754
Without post-mortem	6,377	5,865	5,097	4,921
Post-mortem without inquest	65,897	71,387	69,949	74,973
By Medical practitioner:				
With post-mortem	46,645	55,694	54,390	51,068
Operation mentioned	8,379	7,607	6,900	6,662
Other examination	285	309	182	201
No examination	408,461	409,696	375,263	388,767
Uncertified	1,209	1,135	1,047	1,033
	Sub-totals			
Certified by coroner	92,657	98,427	96,955	101,648
Certified by medical practitioner	463,770	473,306	436,735	446,698
With post-mortem	132,925	148,256	146,248	147,795
Without post-mortem	424,711	424,612	388,489	401,584
Without inquest or examination	409,670	410,831	376,310	389,800
Total deaths	**557,636**	**572,868**	**534,737**	**549,379**
	Percentages			
Certified with post-mortem examination	23.8	25.9	27.3	26.9

During the period 1962-1965 the number of post-mortem examinations has increased, both for coroner's cases (12.1 per cent) and those certified by medical practitioners (9.5 per cent) During the same period the number of deaths certified by coroners has increased by 9.7 per cent, while the number certified by doctors has decreased slightly, 3.7 per cent. The number of coroner's cases without post-mortem has decreased by 22.8 per cent.

In order to analyse the changes more closely, a few of the largest groups of causes of death have been selected and the proportion certified in various ways has been tabulated (in this chapter "NHS hospital" is used for reference to non-psychiatric National Health Service hospitals unless otherwise stated).

Table C44. All causes deaths and percentages of total deaths for selected causes, 1962 to 1965, England and Wales

Cause (and ICD No.)	Year	Died in NHS hospital	Inquest by coroner	Without examination	Uncertified
		Number in thousands			
All causes	1962	254	26.8	408	1.2
	1963	262	27.0	410	1.1
	1964	255	27.0	375	1.0
	1965	263	26.7	389	1.0
		Percentage of total deaths*			
Vascular lesions affecting central nervous system (ICD No. 330-334)	1962	48.3	0.23	88.6	0.11
	1963	48.2	0.19	87.6	0.10
	1964	51.4	0.21	86.5	0.11
	1965	51.5	0.18	87.2	0.10
Arteriosclerotic and degenerative heart disease (ICD Nos. 420-422)	1962	28.6	0.43	73.3	0.53
	1963	29.0	0.40	71.6	0.46
	1964	30.8	0.39	69.9	0.44
	1965	31.1	0.37	69.5	0.42
Diseases of early infancy (ICD Nos. 760-776)	1962	92.2	0.63	56.3	0.35
	1963	93.1	0.50	50.8	0.30
	1964	93.9	0.55	49.2	0.32
	1965	94.4	0.43	52.1	0.29
Accidents, poisonings, and violence (ICD Nos. E800-E999)	1962	46.5	96.8	1.4	0.18
	1963	46.5	95.7	2.0	0.17
	1964	46.9	96.5	1.6	0.14
	1965	47.8	96.2	1.5	0.17

* Total deaths in each cause group

There has been an improvement in the number of deaths uncertified, or without any form of examination (as by operation, post-mortem, inquest or coroner's enquiry). The deaths from medical causes certified after inquest have declined, particularly those in early infancy. The proportion dying in hospital has increased for the medical causes of death especially, the largest percentage increase being for vascular lesions affecting the central nervous system.

Similarly, a table which appeared in *Statistical Review*, Part III until 1964, now Appendix H4 in Part I of the *Statistical Review* for 1965, analyses the data by place of death (i.e. types of hospital, other institutions, own home or other place). Comparative data for the years 1962-1965 is given below.

Table C45. Number of deaths by type of place in which they occurred, 1962 to 1965, England and Wales

Place of death	1962	1963	1964	1965
Psychiatric hospitals				
- NHS	17,455	18,229	16,531	17,125
- other	509	444	448	497
Other hospitals				
- NHS	253,505	262,321	255,375	263,045
- other	14,041	14,657	13,626	13,443
Other institutions	18,101	19,480	17,329	18,880
Own home	225,884	228,818	203,725	207,762
Other places (including private houses)	28,141	28,919	27,703	28,627
Total deaths	**557,636**	**572,868**	**534,737**	**549,379**
	Percentages			
NHS hospital (non-psychiatric)	45.5	45.8	47.8	47.9

In order to compare simultaneously the effect of these factors, a tabulation of the principal group of causes is presented in Table C46 to show the frequency of performance of post-mortem examination on patients dying in NHS hospital and those dying elsewhere whose death was registered in 1965.

Table C46. Performance of post-mortem examination, 1965, England and Wales

Number and percentage by cause and place of death

ICD No.	Cause of death	Total deaths	NHS hospital			Elsewhere		
			Number	With post-mortem	Per cent	Number	With post-mortem	Per cent
001-008	Respiratory tuberculosis	2,008	1,326	471	35.5	682	232	34.0
010-019	Other tuberculosis	274	216	132	61.1	58	23	39.7
030-074	Other bacterial and spirochaetal diseases	393	319	202	63.3	74	56	75.7
080-096	Diseases attributable to viruses	659	490	260	53.1	169	53	31.4
100-138	Other infective and parasitic diseases	120	84	47	56.0	36	7	19.4
001-138	Infective and parasitic diseases	4,310	2,902	1,368	47.1	1,408	629	44.7
140-148	Malignant neoplasm of buccal cavity and pharynx	1,607	845	126	14.9	762	15	2.0
150-159	Malignant neoplasm of digestive organs and peritoneum	37,564	19,454	5,139	26.4	18,110	555	3.1
160-165	Malignant neoplasm of respiratory system	27,495	15,374	4,342	28.2	12,121	812	6.7
170-181	Malignant neoplasm of breast and genito-urinary organs	26,673	13,864	2,744	19.8	12,809	330	2.6
190-199	Malignant neoplasm of other and unspecified sites	6,922	4,327	1,146	26.5	2,595	114	4.4
200-205	Malignant neoplasm of lymphatic and haemato-poietic tissues	6,077	4,462	1,456	32.6	1,615	91	5.6
210-229	Benign neoplasms	763	591	360	60.9	172	65	37.8
230-239	Neoplasms of unspecified nature	669	550	209	38.0	119	19	16.0
240-245	Allergic disorders	2,119	922	421	45.7	1,197	483	40.4
250-254	Disease of thyroid gland	731	464	188	40.5	267	45	16.9
260	Diabetes mellitus	4,206	2,813	714	25.4	1,393	107	7.7
270-277	Diseases of other endocrine glands	252	180	114	63.3	72	34	47.2
280-289	Deficiency diseases	582	384	159	41.4	198	47	23.7

Table C46 - *continued*

ICD No.	Cause of death	Total deaths	NHS hospital			Elsewhere		
			Number	With post-mortem	Per cent	Number	With post-mortem	Per cent
290-299	Diseases of blood and blood-forming organs	2,213	1,500	549	36.6	713	70	9.8
300-309	Psychoses	1,001	820	95	11.6	181	4	2.2
310-326	Psychoneurotic and personality disorders	203	132	73	55.3	71	27	38.0
330-334	Vascular lesions affecting central nervous system	78,147	42,278	7,226	17.1	35,869	2,636	7.3
340-345	Inflammatory lesions of central nervous system	1,518	1,146	459	40.1	372	67	18.0
350-369	Other diseases of nerves and nervous system	4,089	2,619	460	17.6	1,470	277	18.8
370-398	Diseases of eye and ear	195	135	95	70.4	60	53	88.3
400-416	Rheumatic fever and heart disease	6,296	3,505	1,542	44.0	2,791	772	27.7
420-422	Arteriosclerotic and degenerative heart disease	151,718	52,467	16,609	31.7	99,251	28,888	29.1
430-434	Other diseases of heart	14,403	7,828	1,259	16.1	6,575	381	5.8
440-443	Hypertension with heart disease	8,551	3,051	845	27.7	5,500	977	17.8
444-447	Hypertension without heart disease	4,439	1,857	723	38.9	2,582	742	28.7
450-456	Diseases of arteries	15,785	7,431	2,378	32.0	8,354	1,943	23.3
460-468	Other diseases of circulatory system	5,069	3,801	2,232	58.7	1,268	871	68.7
470-483	Influenza and acute upper respiratory infection	926	205	68	33.2	721	130	18.0
490-493	Pneumonia	31,025	21,837	4,876	22.3	9,188	2,714	29.5
500-502	Bronchitis	29,569	13,366	3,548	26.5	16,203	2,428	15.0
510-527	Other diseases of respiratory system	5,098	2,672	1,255	47.0	2,426	898	37.0
530-539	Diseases of buccal cavity and oesophagus	273	209	103	49.3	64	20	31.2
540-545	Diseases of stomach and duodenum	4,210	3,279	1,807	55.1	931	457	49.1

Table C46 - *continued*

ICD No.	Cause of death	Total deaths	NHS hospital			Elsewhere		
			Number	With post-mortem	Per cent	Number	With post-mortem	Per cent
550-561	Appendicitis and hernia of abdominal cavity	1,938	1,565	840	53.7	373	232	62.2
570-578	Other diseases of intestines and peritoneum	4,570	3,721	1,981	53.2	849	334	39.3
580-587	Diseases of liver, gall-bladder and pancreas	3,774	3,108	1,762	56.7	666	200	30.0
590-594	Nephritis and nephrosis	2,884	1,990	708	35.6	894	101	11.3
600-609	Other diseases of urinary system	4,141	3,200	1,333	41.7	941	157	16.7
610-617	Diseases of male genital organs	2,101	1,590	494	31.1	511	67	13.1
620-637	Diseases of breast and female genital organs	167	126	75	59.5	41	20	48.8
640-689	Delivery and complications of pregnancy, child-bearing and puerperium	221	171	153	89.5	50	45	90.0
690-716	Diseases of skin and cellular tissue	392	308	114	37.0	84	17	20.2
720-749	Disease of bones and organs of movement	2,021	1,280	401	31.3	741	43	5.8
750-759	Congenital malformations	4,913	4,121	2,367	57.4	792	393	49.6
760-776	Diseases of early infancy	8,534	8,056	3,768	46.8	478	292	61.1
780-795	Symptoms and ill-defined conditions	4,771	1,600	98	6.1	3,171	107	3.4
E800-E802	Railway accidents	186	39	30	76.9	147	113	76.9
E810-E825	Motor vehicle traffic accidents	7,432	4,600	4,054	88.1	2,832	2,346	82.8
E830-E845	Other road vehicle accidents	167	114	93	81.6	53	45	84.9
E850-E866	Water transport and aircraft accidents	236	30	25	83.3	206	166	80.6
E870-E895	Accidental poisoning	1,643	354	313	88.4	1,289	1,131	87.7
E900-E904	Accidental falls	5,320	4,533	2,835	62.5	787	538	68.4
E910-E936	Other accidents	3,648	1,218	972	79.8	2,430	1,940	79.8

Table C46 - *continued*

ICD No.	Cause of death	Total deaths	NHS hospital			Elsewhere		
			Number	With post-mortem	Per cent	Number	With post-mortem	Per cent
E940-E965	Medical and surgical mis-adventures and complications; and late effects of injury and poisoning	183	141	109	77.3	42	24	57.1
E970-E979	Suicide	5,161	962	816	84.8	4,199	3,518	83.8
E980-E999	Homicide and other injuries inflicted by others	278	73	62	84.9	205	174	84.9
	All causes	**549,379**	**280,170**	**88,091**	**31.4**	**269,209**	**59,704**	**22.2**

Slightly more than one quarter (26.9 per cent) of the half million deaths in 1965 (549,379) were certified and assigned to their cause of death on the basis of post-mortem examination. The proportion was higher among deaths occurring in NHS hospitals (31.4 per cent) than among deaths occurring elsewhere (22.2 per cent). To some extent this lower proportion among deaths occurring at home and elsewhere is due to more deaths occurring in such places from conditions in which the percentage autopsied is low, and fewer deaths from conditions in which the percentage is high: as examples

Cause of death	Dying in NHS hospital		Dying elsewhere	
	Number	Per cent with post-mortem	Number	Per cent with post-mortem
Symptoms and ill-defined conditions	1,600	6.1	3,171	3.4
Accidental falls	4,533	62.5	787	68.4

Conditions for which post-mortem examination is carried out twice as often, or more frequently, in hospital than elsewhere are listed below, with the percentage examined in each case.

Table C47. Causes of death for which post-mortem examination is carried out more frequently in hospital than elsewhere, with percentages, 1965, England and Wales

ICD No.	Cause of death	NHS hospital	Elsewhere
		Per cent with post-mortem examination	
100-138	Other infective disease	56.0	19.4
140-205	Malignant neoplasms	25.6	4.0
230-239	Neoplasms of unspecified nature	38.0	16.0
250-254	Diseases of thyroid gland	40.5	16.9
260	Diabetes mellitus	25.4	7.7
290-299	Diseases of blood and blood forming organs	36.6	9.8
300-309	Psychoses	11.6	2.3
330-334	Vascular lesions affecting central nervous system	17.1	7.3
340-345	Inflammatory disease of central nervous system	40.1	18.0
430-434	Other diseases of heart	16.1	5.8
590-594	Nephritis and nephrosis	35.6	11.3
600-609	Other diseases of urinary system	41.7	16.7
610-617	Other diseases of male genital organs	31.1	13.1
720-749	Diseases of bone and organs of movement	31.3	5.8

The greater frequency with which autopsy is performed in the hospital series may possibly be ascribed to various reasons:

(a) a greater tendency to perform autopsy for these diseases in hospital - this explanation fails to explain why so few of the percentages in this list are above the general average for hospitals (all diseases 31.4 per cent);

(b) a diminished tendency to perform autopsy on subjects dying outside hospital - as all the percentages in this list are lower than the general average for deaths elsewhere (22.2 per cent) this view gains stronger credence;

(c) a change in diagnosis as the result of post-mortem examination from a vague ill-defined group to a more precise diagnosis difficult to achieve without autopsy and hospital investigation.

Conditions for which post-mortem examination is carried out less frequently in hospital than for deaths elsewhere are also met with. They are set out below with the percentage examined in each case.

Table C48. Causes of death for which post-mortem examination is carried out less frequently in hospital than elsewhere, with percentages, 1965, England and Wales

ICD No.	Cause of death	NHS hospital	Elsewhere
		Per cent with post-mortem examination	
030-074	Other bacterial and spirochaetal diseases	63.3	75.7
370-398	Diseases of eye and ear	70.4	88.3
460-468	Other diseases of circulatory system	58.7	68.7
490-493	Pneumonia	22.3	29.5
550-561	Appendicitis and hernia	53.7	62.2
760-776	Diseases of early infancy	46.8	61.1
E830-E845	Other road accidents (i.e. not motor vehicle accidents)	81.6	84.9
E900-E904	Accidental falls	62.5	68.4

Many of these differences associated with place of death can be ascribed to chance fluctuation; but one group - the pneumonias - clearly has a higher percentage examined if the subject dies outside hospital. This may be the result of some element of selection, for if unsuspected illness causes sudden death, removal to hospital may not be possible in time. In such a case death would necessarily occur outside hospital and post-mortem examination to elucidate the cause would also be more likely to occur.

The death records have also been analysed by groups of geographical regions, and by broad age-groups (Table C49). This table shows a lesser age-differential in percentage examined for hospital deaths than for those dying elsewhere, and it is apparent that age is one of the important determinants in this complex of place of death, mode of certification and diagnosis eventually reached.

Table C49. Performance of post-mortem examination, by age, place of death and geographical location of grouped hospital board regions, 1965, England and Wales

Geographical location	Age	NHS hospital			Elsewhere		
		Number	With post-mortem	Per cent	Number	With post-mortem	Per cent
North and East of England	0-	3,903	1,941	49.7	1,153	864	74.9
	5-	20,217	8,055	39.8	19,792	6,599	33.3
	65-	45,035	10,492	23.3	53,665	7,190	13.4
	All ages	**69,155**	**20,488**	**29.6**	**74,610**	**14,653**	**19.6**
Metropolitan regions	0-	4,334	2,502	57.7	871	710	81.5
	5-	26,390	12,447	47.2	16,188	7,002	43.3
	65-	61,260	18,913	30.9	50,548	10,920	21.6
	All ages	**91,984**	**33,862**	**36.8**	**67,607**	**18,632**	**27.6**
South and West of England, and Wales	0-	2,705	1,447	53.5	801	609	76.0
	5-	14,079	5,452	38.7	14,121	5,169	36.6
	65-	35,673	7,850	22.0	42,941	5,833	13.6
	All ages	**52,457**	**14,749**	**28.1**	**57,863**	**11,611**	**20.1**
North and West of England	0-	4,125	2,149	52.1	1,168	934	80.0
	5-	20,882	7,724	37.0	19,791	6,745	34.1
	65-	41,567	9,119	21.9	48,170	7,129	14.8
	All ages	**66,574**	**18,992**	**28.5**	**69,129**	**14,808**	**21.4**
ENGLAND AND WALES	**0-**	**15,067**	**8,039**	**53.4**	**3,993**	**3,117**	**78.1**
	5-	**81,568**	**33,678**	**41.3**	**69,892**	**25,515**	**36.5**
	65-	**183,535**	**46,374**	**25.3**	**195,324**	**31,072**	**15.9**
	All ages	**280,170**	**88,091**	**31.4**	**269,209**	**59,704**	**22.2**

Composition of groups of regions -

North and East	*Metropolitan*	*South and West*	*North and West*
Newcastle	North East Met.	Wessex	Liverpool
Leeds	South East Met.	Oxford	Manchester
Sheffield	South West Met.	South Western	Birmingham
East Anglia	North West Met.	Wales	

Children under 5 years of age

A greater proportion of children under 5 years of age die in hospital rather than elsewhere than is found for deaths at older ages -

Age-group (in years)	*Percentage dying in NHS hospital*
0-	79.1
5-	53.9
65 and over	48.4

and in addition the proportion of deaths with post-mortem examination is greater for children, wherever the place of death. The result is that a greater proportion of all deaths at this age are followed by post-mortem examination than at other ages -

Age-group (in years)	*Percentage with post-mortem examination*
0-	58.5
5-	39.1
65 and over	20.4

Children at this age (under 5 years) differ from other age-groups in that the percentage with post-mortem examination is higher if the child dies outside hospital -

Age-group	NHS hospital	Elsewhere
	Percentage with post-mortem examination	
0-	53.4	78.1
5-	41.3	36.5
65 and over	25.3	15.9

Some of the major disease groups are set out below to provide more detailed information on this subject.

Table C50. Performance of post-mortem examination for children under 5 years, 1965, England and Wales

Number and percentage, by cause and place of death

ICD No.	Cause of death	Total deaths	NHS hospital		Elsewhere	
			Number	Per cent with post-mortem	Number	Per cent with post-mortem
240-245	Allergic disorders	48	26	57.7	22	95.5
340-345	Inflammatory diseases of central nervous system	299	268	58.6	31	90.3
350-357	Other diseases of central nervous system	140	101	51.5	39	46.2
490-493	Pneumonia	2,230	1,044	64.5	1,186	88.3
500-502	Bronchitis	461	178	83.1	283	91.9
510-527	Other diseases of respiratory system	163	77	84.4	86	96.5
560-561	Hernia of abdominal cavity	126	113	69.0	13	92.3
570-578	Other diseases of intestines peritoneum	469	354	66.7	115	71.3
580-587	Diseases of liver, gall-bladder and pancreas	135	123	55.3	12	41.7
750-759	Congenital malformations	3,687	3,284	56.4	403	57.3
760-769	Birth injuries, asphyxia and infections of newborn	5,029	4,670	60.6	359	71.9
770-776	Other diseases peculiar to early infancy	3,504	3,385	27.7	119	28.6
E800-E999	Accidents, poisonings, and violence	1,386	435	83.7	951	84.9

Several disease groups have proportions of subjects coming to autopsy which exceed ninety per cent, where death took place outside hospital. A high rate is general in this age-group and there is only one diagnostic group "Other diseases peculiar to early infancy" for which the proportion falls below forty per cent. By contrast, for deaths at all ages (See Table C46) nearly half the disease groups have less than forty per cent of deaths followed by post-mortem examination.

In most groups the percentage with post-mortem examination was higher if death occurred outside hospital. The only exceptions are two small groups with less than 150 deaths.

Certification of death according to regions

The proportion of deaths coming to autopsy in different parts of the country depends on several factors - the age composition of the population, the proportion admitted to hospital and dying in hospital, as well as the practice and frequency of performing post-mortem examination at various ages according to the place of death. The percentage of deaths occurring in hospital in the four groups of hospital regions in 1965 was:

	0-	5-	65 and over	All ages
North and East of England	77.2	50.5	45.6	48.1
Metropolitan regions	83.3	62.0	54.8	57.6
South and West of England and Wales	77.2	49.9	45.4	47.5
North and West of England	77.9	51.3	46.3	49.1
England and Wales	**79.1**	**53.9**	**48.4**	**51.0**

In the Metropolitan regions hospitals are the place of death for a greater proportion of persons dying than in other regions, and at the same time the proportion of post-mortem examination is greater in the Metropolitan regions than in other regions (see table above). The combined result of these two effects is not quite the same for various age-groups in view of the differences already noted above. The over-all proportion of children under five years of age whose cause of death is confirmed by post-mortem examination is:

Metropolitan regions	61.7 per cent
Other regions	57.3 per cent
England and Wales	58.5 per cent

The difference between the Metropolitan and other regions for children is much smaller than at ages 65 and over:

Metropolitan regions	26.7 per cent
Other regions	17.8 per cent
England and Wales	20.4 per cent

It is clear that the certainty of diagnosis of cause of death will be greater for young children, and the consistency of diagnosis throughout the country should be greater. But for the elderly, on account of the wider regional variation in the rate of post-mortem confirmation (fifty per cent greater in the Metropolitan regions than elsewhere) not only will the general level of diagnosis be more uncertain, but greater variability can be expected throughout the country.

Table C51. Outstanding causes of death (England and Wales, 1965) with respect to (a) performance of post-mortem examination and (b) place of death

Figures in brackets are (percentage dying in hospital, percentage with post-mortem examination)

		(b) Less than 35 per cent dying in hospital	Intermediate groups	More than 80 per cent dying in hospital
(a)	More than 80 per/cent with post-mortem examination	Water and aircraft accidents (13,81) Poisoning accidents (22, 88) Other accidents (33,80) Suicide (19,84) Homicide (26,85)	Road traffic accidents (62,86)	
	Intermediate groups	Arteriosclerotic and degenerative heart diseases (35,30) Railway accidents (21,77)	All other conditions	Appendicitis and hernia (81,55) Other diseases of intestines and peritoneum (81,51) Diseases of liver, gall-bladder and pancreas (82,52) Congenital malformations (84, 56) Accidental falls (85,63)
	Less than 35 per cent with post-mortem examination	Influenza and acute upper respiratory infections (22,21) Symptoms and ill-defined conditions (34,4)	Malignant neoplasms (55,16) Diabetes (67,20) Diseases of blood (68,28) Vascular disease affecting central nervous system (54, 13) Inflammatory disease, CNS (75,35) Other diseases of heart (54, 11) Bronchitis (45,20) Diseases of bones &c. (63,22)	Psychoses (82,10)

Table C51 presents some causes of death which are outstanding on account of the extreme percentages (either high or low) of **(a)** performance of post-mortem examination, or **(b)** death in hospital. The diagnostic groups specially recorded are:

(a)	performance of post-mortem examination:	more than 80 per cent less than 35 per cent
(b)	dying in hospital:	more than 80 per cent less than 35 per cent

Many forms of accident may cause death before admission to hospital is possible, and a post-mortem examination follows in a large proportion of cases. Falls - of which fracture of the femur in the old make up the bulk - are more likely to be admitted to hospital and to die in hospital, but post-mortem examination is not required so frequently.

At the other extreme are deaths from psychoses of which the majority die in hospital, but few have any post-mortem examination. The reasons for both these characteristics should be apparent on reflection.

Influenza and acute upper respiratory infections are clinical diagnoses which, particularly in the past, have often been used regardless of the presence of influenza virus. Along with Symptoms and ill-defined conditions, these may be regarded as unsatisfying diagnoses. It is a moot point whether the lack of hospital diagnostic facilities and post-mortem examination was the cause of the vague diagnosis, or whether the vague clinical features impeded admission to hospital. It is noteworthy that half the deaths from Symptoms and ill-defined conditions were of persons aged 85 years and over, compared with only one eighth for all causes of death.

Summary

Post-mortem examination is performed least often on persons aged 65 and over; and most frequently on children who die, and after deaths from injury or other violent causes. Admission to hospital influences the performance of post-mortem examination in varied ways, according to the subject's age; usually a higher proportion of deaths in hospital come to autopsy than of deaths elsewhere, but this does not apply in the case of young children or deaths assigned to pneumonia.

Most unsatisfactory diagnoses are found in deaths of the very old; this is also true of deaths occurring outside hospital and without autopsy. How far lack of adequate investigation is responsible for the indefinite diagnosis has not been determined.

Regional differences in frequency of admission to hospital and performance of post-mortem examination can influence the precision of diagnosis to a variable extent at different ages.

REGIONAL MORTALITY

Area Comparability Factors (ACFs)

Area comparability factors (ACFs) were first introduced in 1934* to correct for varying composition in sex and age of the population of different local areas. Originally introduced for the comparison of crude death rates, their use was extended in 1949 to correct crude births also.

The basis of the method as used for the correction of birth rates was described in Part III (Commentary) of the *Registrar General's Statistical Review* for 1954 on pages 30-32, and for the correction of death rates on page 57. Recent amendments to the method make it desirable to describe the current procedure.

The method of making corrections consists of three main steps:

(A) Determination of the population of local areas by sex and age.

(B) Calculation of the indirect standardising factor based on key age-groups. For births the key age-groups are females in 5-year age-groups from 15 to 44; for deaths they are persons under 5, aged 5 to 34, and persons aged 85 and over, together with males and females separately in the age-groups 35-54, 55-64, 65-74 and 75-84. The weighting of these groups is based upon a three year experience of births or deaths around census year.

(C) Correction for the presence of hospitals and other residential institutions. This is effected by deducting non-transferable deaths and distributing them uniformly over the whole country; a similar re-distribution is also carried out for institutional population. An adjusted death rate is calculated from these adjusted figures, and the ratio of this to the crude death rate enables the correcting factor to be calculated.

(A) DETERMINATION OF POPULATION OF LOCAL AREAS

The basic population for calculating ACFs in current use is the 1961 Census civilian population for each local authority area, amended for changes of boundary and migration between areas. At the annual review, adjustments are made if the population has changed by 10 per cent or more from the census population, and subsequently after further 5 per cent changes accrue.

The total change in population is estimated from electoral and housing returns. The number of births and deaths is known; deduction of the natural increase due to these from the total population change leaves the net population movement. Since 1963 reports have been received from the Ministry of Housing and Local Government whose Local Planning Officers can give information about the type of immigrant, e.g.

/

* *Registrar General's Statistical Review of England and Wales* for the year 1934, Text Volume, p.6.

young married families, retired persons, or other groups. These reports are converted into estimates by sex and age with the help of census weighting factors.

There are occasionally large changes due to movement of school or armed forces populations. The age-groups of these are known fairly accurately and so the ACF can be re-worked with constant factors applied to the population change, if the movement exceeds 10 per cent of the census population.

ACFs for New Towns are re-worked every year. The persons who move to new towns are for the most part young married couples with young children, and a constant factor for each new town can therefore be used to calculate the addition to the P_f values.

(B) CALCULATION OF INDIRECT STANDARDISATION FACTOR

The symbols used in 1954 to describe the process are retained.

f_x fertility rate (or age specific death rate) for the age-group (x)
p_x population of age-group (x)
P total population (all ages) of area under consideration
R rate for all ages of both sexes
p_f the population weighting value

Used with an accent (thus P') the symbols refer to local areas; unaccented they refer to England and Wales.

Population data (P total, and P_x for the key age-groups, also P' and the P'_x values) are determined from the 1961 Census enumerated population amended if required as described above.

Fertility or death rates (R and f_x values) for England and Wales are determined for three years around census date. From them the age-group weighting factors (f_x/R) are calculated. The local population in each key age-group (P'_x) is multiplied by the corresponding weighting factor, and the products, known as P_f values are accumulated to give the total P_f value for the local area. Symbolically, this is

$$\text{Sum of } f_x P'_x / R = \text{total } P_f \text{ value}$$

Now R (the rate for England and Wales) is a similar accumulated product, but using national populations, thus

$$\text{Sum of } f_x P_x / P = R$$

although in practice it is calculated from total deaths divided by total population. This expression for R can be substituted into the local accumulated product, and this now becomes

$$\frac{\text{Sum of } f_x P'_x P}{\text{Sum of } f_x P_x} = \text{total } P_f \text{ value}$$

It will readily be seen that the local population (P') divided by this P_f value is the required indirect standardisation factor

$$\frac{\text{Sum of } f_x P_x \;/\; P}{\text{Sum of } f_x P'_x \;/\; P'} = \frac{\text{actual national death rate}}{\text{expected rate in local population}}$$

(C) CORRECTION FOR INSTITUTIONS

At one time an adjustment was made because disproportionate numbers of women of childbearing ages in some areas were resident in mental institutions where they were not exposed to risk of childbearing. Since the repeal of the *Lunacy and Mental Treatment Acts* in 1959, and the subsequent greater freedom of patients, this is no longer considered necessary. The following account therefore refers only to correction of non-transferable deaths of inmates of hospitals and other institutions.

Death ACFs

For statistical purposes a death is assigned to the area of usual residence of the deceased provided it was in England and Wales. For this purpose institutions such as almshouses, boarding schools, children's homes and prisons are treated as the usual residence of their inmates, and chronic sick and psychiatric hospitals are so treated for those who have been inmates for six months or more. It follows that areas which have large hospital or institutional facilities, especially those for the chronic sick or elderly, will be assigned inflated numbers of deaths giving a false picture of mortality in the area as a whole. To compensate for this feature an adjustment needs to be made to the ACF, and this is done by the method shown in Table C52.

The number of persons resident in hospitals and institutions is known for each local area and for the whole country. By distributing the institutional population over the whole country according to the size of the non-institutional population adjusted populations are obtained with an equal proportion of the institutional population. Similarly, non-transferable deaths are distributed over the whole country, in proportion to the number of other deaths in local authority areas.

Using these adjusted population and death figures, a corrected death rate is calculated. The ratio between this corrected death rate and the ordinary crude death rate is termed the "death alpha" which multiplied into the ACF gives the corrected ACF. These are published annually in the *Statistical Reviews of the Registrar General*, Part I (Medical) Table 13 and Part II (Population) Table E.

ACF and SMR

The Area Comparability Factor and the Standardised Mortality Ratio are both methods of indirect standardisation, i.e. they apply standard national rates to local populations. The differences between them are:-

Table C52. Example of calculation of adjustment for institutional deaths ("death alphas")

Area	POPULATION				DEATHS			RATES AND RATIO		
	Home population (mid-year)	Institutional population	Non-institutional population	Adjusted population with (b) distributed over England and Wales by population	Mid-year to mid-year		With non-transferable deaths (f) distributed over other deaths (e)	Crude death rate	Adjusted death rate	Ratio
					Other than non-transferable	Non-transferable				
								$\frac{(e) + (f)}{(a)}$	$\frac{(g)}{(d)}$	$\frac{1}{h}$ (i.e. death alpha)
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
"XYZ"	29,410	135	29,275	29,492	230	22	249	8.5685	8.4430	0.985

Summary

Initial data: Population .. .. 29,410) Crude death rate)
Deaths .. .. 252) per thousand living 8.57)

I. After re-distribution: Adjusted population 24,492) Adjusted death rate)
Adjusted deaths 249) per thousand living 8.44)

$\alpha = 0.985$

II. Corrected ACF (deaths) = uncorrected ACF x death alpha

(i) The basic national value is taken as 1.00 for the ACF and 100 for the SMR.

(ii) The SMR uses current national rates for geographical comparisons, whereas the ACF resembles the serial SMRs in retaining rates centred on the year of the last census.

(iii) The ACF uses an up-dated population basis, whereas the SMR is usually based upon the population composition at the last census.

(iv) The SMR can only correct for the presence of high risk population in institutions by adjusting the population basis, whereas the ACF spreads the risk more evenly over the whole country.

The range of the two ACFs can be illustrated by three examples, namely a residential area for retired persons, an overspill area with developing new industries, and a town with large hospitals for chronic sick.

	Birth ACF	Death ACF
Worthing M.B.	1.52	0.44
Stevenage U.D.	0.73	2.31
Bodmin M.B.	1.14	0.34

These examples, extreme though they may be, show the dangers of using crude death rates for comparisons, unless attention is given to these distorting factors.

Mortality differentials by region and by population aggregation

Death rates are known to fluctuate from year to year with changes in the prevalence of respiratory diseases and other epidemics and with the severity of the climate, and these transient fluctuations are liable to operate unequally in different parts of the country. It is advantageous therefore to combine the mortality experience of several years before comparing geographical subdivisions, in order to eliminate to some extent these extraneous influences. This is also the practice in producing life-tables, to obtain a reasonably large body of data representative of the general mortality in recent years.

A similar procedure was used by Stocks* (1947) in his analysis of "Regional and local differences on cancer death rates". In that report he compared deaths accumulated over the ten years 1921-1930 with those over the five years 1940-1944; in this present conspectus they cover the three years 1963-1965. In order to eliminate the effect of differences in sex and age composition, the results for each disease are summarised as SMRs (Standardised Mortality Ratios based on the experience of both sexes for the whole country during the three years reviewed).

* General Register Office (1947) *Studies of Medical and Population Subjects*, No. 1. London H.M.S.O.

These are shown in Table C55 and the average death rates over the three years are presented in Table C56 by broad age-groups. In view of the changes in boundaries of many of the regions during the period, all results are based upon local authority areas constituting the regions as in mid-1965.

An important consideration in assessing geographical differences is the possibility that recorded causes reflect different diagnostic traditions, or the result of differing use of hospital resources, laboratory procedures or post-mortem examinations. The location of these areas can be illustrated from the use of those ICD categories which consist largely of ill-defined residual groups or vague clinical concepts. The best example of this in the list available here is ICD No. 422 "Other myocardial degeneration" which includes terms such as Senile heart disease or Degeneration of heart. The areas from which the highest and the lowest Standardised Mortality Ratios are recorded for this diagnosis are -

South West Region	135	Merseyside conurbation	68
Wales and Midlands -		Greater London conurbation	72
small towns	119	Tyneside conurbation	86
rural districts	115	West Yorkshire conurbation	86
East Midland	115		
North of England -			
South East Lancashire conurbation	114		
small towns	114		

The conurbations - especially Merseyside and Greater London - treat a greater proportion of patients in teaching hospitals, and it can safely be assumed that higher diagnostic standards prevail. The rural districts and areas not readily served by the larger medical centres make this diagnosis most frequently. It is noteworthy that the South East Lancashire conurbation is in fact the only conurbation which still includes a rural district within its boundaries.

This ICD category (ICD No. 422) is one of the biggest single causes of death, accounting for one in sixteen of all deaths in 1965. This should be borne in mind when unusual results are found with deaths assigned to other categories.

Mortality from malignant neoplasms

There is a clearly marked urban/rural range of mortality from malignant neoplasms of all sites (ICD Nos. 140-205). Rural areas have an average SMR of 91 and the mortality in other areas rises with increasing size of town to an average SMR of 106 for all conurbations (England and Wales = 100). The variation among individual conurbations is however almost as great as between the rural and all urban aggregates.

Tyneside conurbation	114
Merseyside	112
Greater London	107
South East Lancashire	106
West Midlands	103
West Yorkshire	101

The range of mortality from cancer between different geographical sub-divisions of the country varies according to the site of the neoplasms. It is least for

ICD Nos. 152 - 154 Intestine and rectum (SMR 92 - 110) and is greatest for the two sites

ICD Nos. 162, 163 Lung (including bronchus and trachea) (SMR 73 - 137)

ICD No. 196 Bone (a smaller group) (SMR 69 - 137)

Provided there are comparable numbers of cases, one would expect the wider range to show most clearly any real differences in mortality.

Cancer of the lung (ICD Nos. 162, 163)

The form of cancer with the largest differences in mortality between geographical sub-divisions is cancer of the lung, which also shows a steady upward trend in SMR with increasing aggregation of population. The Standardised Mortality Ratio is low in rural areas (79), but is fifty per cent greater in conurbations (119).

The conurbations also show a wide range of mortality amongst themselves, viz.-

Tyneside	137
Merseyside	133
Greater London	123
South East Lancashire	113
West Midlands	109
West Yorkshire	100

Figures for county boroughs were quoted by Stocks (op.cit.) based on the comparative mortality of males aged 45-64 during the period 1921-1930. The figures for towns making up the conurbations were -

Tyneside	-	Newcastle	57
Merseyside	-	Liverpool	113
Greater London	-	London A.C.	172
South East Lancashire	-	Manchester	182
		Oldham	41
		Salford	123
West Midlands	-	Birmingham	148
West Yorkshire	-	Bradford	101
		Huddersfield	243
		Leeds	202

There is little correspondence between the order of prevalence over the two periods, and as this is a form of cancer that has increased in incidence since the earlier study, it is understandable that changes in relative rank should take place. However, the wide variation between neighbouring towns in the same conurbation raises doubt whether diagnosis has been uniform in the past.

Cancer of the oesophagus (ICD No. 150)

There is no regular urban/rural differential, and regional differences are moderate. Outstandingly high mortality is recorded for Merseyside (SMR 126), the North West Region generally (SMR 112), and for Wales (SMR 125). The lowest ratios are found in Yorkshire and Humberside (SMR 81) and West Yorkshire conurbation (SMR 85). The East Midland Region has also a low SMR of 89.

Cancer of the stomach (ICD No. 151)

Wales has the highest mortality (SMR 132) 59 per cent above that of South and East of England excluding Greater London (SMR 83). Tyneside (SMR 126) with other dense urban areas outside conurbations in the North of England (SMR 125) and the North Region (SMR 124) all have high ratios. The lowest is found in the Outer Metropolitan Area (SMR 75).

Cancer of the larynx (ICD No. 161)

Mortality increases rather irregularly with aggregation of population. Merseyside (SMR 140) and Tyneside (SMR 126) have the heaviest mortality for any conurbation, and that of the North Region generally is high (SMR 127). The South and East of England excluding Greater London (SMR 93) and Greater London (SMR 91) have low mortality, the lowest regional ratio being the South West (85).

Cancer of the breast (ICD No. 170)

There is a moderate urban/rural differential (SMRs 103/94) but the highest mortality is found in moderate sized towns of the South East (SMR 110) and the lowest in the North Region (SMR 87).

Cancer of the neck of uterus (ICD No. 171)

The North Region (SMR 131) and West Yorkshire conurbation (SMR 134) have the highest mortality, but conurbations elsewhere have lighter mortality. That of Greater London (SMR 82) is only two thirds of mortality experienced in the north.

Cancer of body and other parts of uterus (ICD Nos. 172-174)

Less heterogeneity is shown for this site; the highest SMRs are recorded for South West Region (113) and Wales (113) with East Midland next (112).

Cancer of prostate (ICD No. 177)

Mortality is lowest in some of the northern conurbations (South East Lancashire SMR 85, West Yorkshire SMR 86, Merseyside SMR 88) and is highest in rural districts and small towns in the South East (SMRs 111, 114).

Cancer of bladder (ICD No. 181.0)

The highest SMR is found for Tyneside (126) and the lowest in rural areas (86). In this respect it behaves like cancer of the lung, but the urban/rural differential is not so clear-cut.

Lymphosarcoma and reticulosarcoma (ICD No. 200)

This cause of death is recorded most frequently in Greater London (SMR 123) and Merseyside (SMR 123); however numbers are small, and differences are of doubtful significance.

Leukaemia (ICD No. 204)

The only outstanding SMR is that for Greater London (113).

Other diseases

Vascular disease affecting the central nervous system (ICD Nos. 330-334)

More deaths assigned to these categories are recorded for the North Region (SMR 115) and for Wales (SMR 110). The lowest SMR - that for Greater London conurbation (77) - stands in a class by itself, and contrasts with the very average figures for the rest of the South East. Merseyside with an SMR of 97 is also much lower than northern places and the possibility of different standards of diagnosis must be considered.

Chronic rheumatic heart disease (ICD Nos. 410-416)

The highest Standardised Mortality Ratios are found in conurbations (116) generally, including Greater London (115) and in towns of 100,000 population or more except in the South and East; the lowest are found in East Anglia (72) and the Outer Metropolitan Area (73). Wales has the highest mortality (SMR 128) for any region. The range from all conurbations to all rural areas is from 116 to 82.

Chronic endocarditis not specified as rheumatic (ICD No. 421)

The geographical distribution of mortality for this category resembles to some extent that of rheumatic endocarditis.

	Chronic rheumatic heart disease (ICD Nos. 410-416)	*Chronic endocarditis not specified as rheumatic* (ICD No. 421)
Wales	128	128
Greater London	115	113
Remainder of South and East of England	77	95

However, the gap between conurbation and rural areas is not so wide (only from 108 to 97) and one conurbation - West Midlands (SMR 86) - has the lowest mortality in its sector of the country.

Arteriosclerotic heart disease (ICD No. 420)

West Yorkshire conurbation has the highest SMR (126) followed by the North Region (118) and the Merseyside conurbation (116). The two most southern conurbations have the lowest mortality (West Midlands SMR 94, Greater London SMR 95). Lower mortality is also found in rural areas in the South and East of England (SMR 88) and Wales and Midlands (SMR 91) than in the North of England (SMR 106).

Other myocardial degeneration (ICD No. 422)

The recorded mortality assigned to this category has been discussed earlier. It is particularly low in two conurbations:

	SMR
Merseyside	68
Greater London	72

Other diseases of the heart (ICD Nos. 430-434)

	SMR
Merseyside	122
Greater London	91

contrast with the previous category for the two conurbations. Mortality assigned to this group of cardiac diagnoses is low generally in the South and East and high in the North of England (SMR 109).

Hypertension, with or without heart disease (ICD Nos. 440-447)

The highest SMRs are recorded for Wales (132) and for urban areas in Wales and Midlands (with populations over 100,000, 121; 50,000 to 100,000, 121; and under 50,000, 118); the lowest for East Anglia (80). Other areas with low ratios include some urban and rural areas in the South and East (87, 88) and the South East Lancashire conurbation (88).

Bronchitis (ICD Nos. 500-502)

This group of diseases shows a wide range of mortality from rural districts in the South and East (SMR 65) to that of South East Lancashire conurbation (SMR 145). There is a gradation with urban/rural aggregation in each sector of the country.

	North	Wales and Midlands	South and East
Conurbations	131	131	101
Areas outside conurbations:			
Urban areas with populations of 100,000 and over	132	125	95
Urban areas with populations of 50,000 and under 100,000	119	115	77
Urban areas with populations under 50,000	105	107	73
Rural districts	82	85	65

The ratios in general increase, and the urban/rural differential becomes bigger as one passes from the south and east to the west and north.

Reasons for differences in mortality

A few of the possible explanations of these differences are:

(i) Greater survival in some areas because of closer proximity to medical facilities, e.g. more hospital beds per head of population, more teaching hospitals or more rapid access. This type of explanation springs to mind for Liverpool or London, but among the diseases discussed above the only one they have in common which is below the average level is Other degenerative diseases of the heart. For all conurbations this is the only diagnosis well below average (SMR 84).

(ii) A rather more credible explanation for the low level of the above mentioned diagnosis in Liverpool and London would be that other more sophisticated diagnoses are being used. Liverpool has, in fact, an excess in Arteriosclerotic heart disease, including coronary disease, but London has not. They do have in common an excess of Chronic rheumatic heart disease (ICD Nos. 410-416), but real aetiological factors may be operating for this group as well.

(iii) There may be varying incidence of disease, due to the unequal distribution of aetiological agents. These would include specific industrial hazards, but the obvious and constant urban/rural differential naturally suggests as a possible factor pollution of the air in towns from industrial or domestic chimneys, motor traffic or tobacco smoking. Many other social factors, housing, migration and selection or provision of social services are also bound up inevitably with this categorization. The diseases which show the greatest correlation with urban/rural differences are discussed below.

(iv) Another aetiological factor may be the relative hardness of the water supply due to the amount of calcium or other mineral constituents. The south-east of England is rich in chalk and limestone; but the west and north, and towns drawing their water-supply from Wales and the north-west, have on the whole soft water relatively free from lime. The diseases more frequent in these latter areas are cancer of the oesophagus, stomach, larynx, lung and bone. The disease most particularly suspected of being affected by soft water supplies, Arteriosclerotic heart disease, including coronary disease (ICD No. 420), has higher SMRs in the North and in Wales than in the Midlands and the South and East; but of the conurbations supplied with soft water West Yorkshire is the only one to have outstanding high mortality, while the West Midlands conurbation has mortality well below average and slightly less than Greater London.

(v) Fertility and childbearing is related to the incidence of cancer of the breast and uterus.

Urban/rural differences

In order to assess numerically any mortality differential existing in association with population aggregation, the five urban/rural aggregates have been treated as five equally spaced steps of population density (rural - small towns - medium sized towns - large towns - conurbations) and a regression coefficient calculated.

Table C53. Regression of mortality upon population aggregation as percentage of mean death-rate, 1963-1965, England and Wales

ICD No.	Cause of death	Age (in years)				
		0-	5-	15-	45-	65 and over
	Malignant neoplasm of:					
140-148	buccal cavity and pharynx	-	-	0.0	1.7	2.6
150	oesophagus	-	-	0.0	(3.6)	(-1.0)
151	stomach	-	-	(5.0)	5.5	2.4
152-154	intestine and rectum	-	-	(3.3)	2.1	1.9
161	larynx	-	-	0.0	6.3	5.4
162,163	trachea, lung and bronchus	-	-	11.0	9.9	10.0
170	breast	-	-	(3.7)	1.5	1.8
171	cervix uteri	-	-	1.1	(-0.2)	6.0
177	prostate	-	-	-	1.0	-3.8
181.1	bladder	(+)	-	(+)	7.0	5.5
200	Lymphosarcoma and reticulosarcoma	(3.3)	(-3.3)	(1.0)	4.2	(1.2)
204	Leukaemia	(-2.1)	(-4.8)	(2.2)	2.0	(0.5)
140-205	All malignant neoplasms	-1.9	-2.8	3.3	4.9	3.5
410-416	Chronic rheumatic heart disease	-	(+)	(10.4)	(8.4)	8.2
420	Arteriosclerotic heart disease	-	-	(5.4)	(3.4)	(1.9)
421	Chronic endocarditis not specified as rheumatic	-	-	(10.0)	(1.1)	(3.7)
422	Other myocardial degeneration	(+)*	(-)	(-5.0)	(-8.9)	(-7.2)
500-502	Bronchitis	(13.5)	(-20.0)	(8.9)	(11.6)	(10.3)

(+), (-) indicates sign of non-significant regressions based on scanty data.

This has been done for each age-group in the diseases shown in Table C53 and has been recorded as a percentage of the mean death-rate for the whole country. Thus for lung cancer at ages 65 and over the figure '10.0 per cent' indicates that large towns have a death rate (on the average) 10 per cent greater than medium sized towns, and conurbations have a death-rate 20 per cent greater; while rural districts have a rate 20 per cent lower. It can be considered an average estimate, summing up the available information in a single figure.

If the death-rates are not in strict increasing (or decreasing) order, or if the regression coefficient is not statistically significant, the result is placed in brackets; while if the rate for England and Wales is too small, no figure is shown at all, or only an indication of its sign (positive or negative) placed in brackets. Only diseases showing at least one informative result are included in the list in Table C53.

Lung cancer shows the clearest mortality gradient with population aggregation. Assuming a latent period of 15-20 years before adverse environmental influences produce their effect, the early appearance of this differential so markedly in the age-group 15-44 tends to suggest general air pollution rather than smoking as the basis for these geographical differences; only if known differences in cigarette smoking were available for comparison of whole communities could the effect of the latter be estimated. Substantial effects are also discernible upon bronchitis (all ages), chronic rheumatic heart disease and cancer of the larynx, neck of uterus and bladder (at varying ages of later life).

Bronchitis is doubly interesting through apparently showing (1) an adverse effect on young children (as well as on the elderly) in urban areas, and (2) an apparent effect in the reverse direction in children 5-14 years of age. This latter may in fact be real and explicable through allergic diseases associated with bronchitis being accentuated by residence in rural areas. The number of deaths in this age-group is small, only 110 in the three years 1963-1965. Confirmation has therefore been sought by calculating similar rates for an earlier triad of years 1958-1960 in which 109 deaths occurred.

Table C54. Bronchitis death rates per 10,000 living, by age and type of area, 1958-60 and 1963-65, England and Wales

	Period	0-	5-	15-	45-	65 and over
Conurbations	1958-60	1.4	0.04	0.23	7.5	47.9
	1963-65	1.5	0.04	0.21	7.4	46.2
Areas outside the conurbations:						
Urban areas with populations of 100,000 and over	1958-60	1.4	0.05	0.25	6.7	40.1
	1963-65	1.6	0.04	0.23	7.6	45.1
Urban areas with populations of 50,000 and under 100,000	1958-60	1.5	0.05	0.18	6.0	35.2
	1963-65	1.0	0.07	0.19	6.3	37.3
Urban areas with populations under 50,000	1958-60	1.4	0.05	0.17	5.4	32.7
	1963-65	1.1	0.06	0.18	6.1	36.0
Rural districts	1958-60	1.1	0.08	0.15	3.9	25.5
	1963-65	0.9	0.08	0.15	4.4	30.3

Table C55. Standardised Mortality Ratios in standard regions, and urban and rural England and Wales

	Malignant neoplasms including neoplasms of lymphatic and haematopoietic tissues (140-205)	Malignant neoplasm of buccal cavity and pharynx (140-148)	Malignant neoplasm of oesophagus (150)	Malignant neoplasm of stomach (151)	Malignant neoplasm of small intestine (including duodenum) large intestine and rectum (152-154)	Malignant neoplasm of larynx (161)	Malignant neoplasm of bronchus, trachea and lung (162,163)	Malignant neoplasm of breast (170)
ENGLAND AND WALES	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Urban and rural aggregates:								
Conurbations	106	101	99	103	102	106	119	103
Areas outside conurbations:								
Urban areas with populations of 100,000 and over	105	108	103	111	104	114	107	101
Urban areas with populations of 50,000 and under 100,000	99	103	102	92	101	98	97	101
Urban areas with populations under 50,000	96	97	97	98	102	102	87	100
Rural districts	91	96	101	92	93	81	79	94
NORTH OF ENGLAND	**102**	**109**	**101**	**114**	**103**	**116**	**104**	**93**
Standard regions:								
North	104	119	106	124	102	127	107	87
Yorkshire and Humberside	100	105	81	107	104	107	97	94
North West	103	107	112	115	103	117	107	95
Conurbations:	**107**	**109**	**107**	**116**	**106**	**124**	**116**	**94**
Tyneside	114	100	107	126	108	126	137	92
West Yorkshire	101	105	85	112	101	117	100	95
South East Lancashire	106	114	113	119	110	119	113	95
Merseyside	112	109	126	110	107	140	133	93
Areas outside conurbations:								
Urban areas with populations of 100,000 and over	108	109	93	125	107	120	116	96
Urban areas with populations of 50,000 and under 100,000	103	111	107	110	105	127	106	89
Urban areas with populations under 50,000	97	111	97	114	99	114	90	91
Rural districts	91	106	93	103	95	85	75	92
WALES AND MIDLANDS	**98**	**103**	**104**	**110**	**102**	**97**	**90**	**99**
Standard regions:								
Wales	99	115	125	132	105	105	82	94
East Midland	95	93	89	98	99	92	87	98
West Midland	99	105	103	105	102	95	97	103
Conurbation:								
West Midlands	103	108	95	109	105	111	109	104
Areas outside conurbations:								
Urban areas with populations of 100,000 and over	105	112	108	122	103	117	104	101
Urban areas with populations of 50,000 and under 100,000	99	97	114	103	106	79	96	95
Urban areas with populations under 50,000	96	101	103	108	106	98	81	100
Rural districts	90	99	107	105	93	75	73	93
SOUTH AND EAST OF ENGLAND (excluding Greater London)	**95**	**93**	**99**	**83**	**97**	**93**	**90**	**103**
Standard regions:								
South East (excluding Greater London):	96	93	99	75	94	97	95	107
Outer Metropolitan	97	94	101	80	99	97	96	101
Rem. South East	94	94	106	90	96	85	80	103
South West	95	92	89	88	99	91	90	98
East Anglia								
Urban areas with populations of 100,000 and over	102	103	107	93	102	108	102	105
Urban areas with populations of 50,000 and under 100,000	97	102	96	79	97	89	92	110
Urban areas with populations under 50,000	95	86	94	82	100	96	89	105
Rural districts	91	91	100	81	92	84	84	96
GREATER LONDON	**107**	**94**	**94**	**93**	**97**	**91**	**123**	**109**

aggregates within regional groups, for selected causes of death, 1961-1965,

Malignant neoplasm of cervix uteri (171)	Malignant neoplasm of corpus uteri and uterus unspecified (172-174)	Malignant neoplasm of prostate (177)	Malignant neoplasm of bladder (181.0)	Malignant neoplasm of bone (196)	Lymphosarcoma and reticulosarcoma (200)	Hodgkin's disease (201)	Leukaemia and aleukaemia (204)	Vascular lesions affecting central nervous system (330-334)	Chronic rheumatic heart disease (410-416)	Arteriosclerotic heart disease, including coronary disease (420)	Chronic endocarditis not specified as rheumatic (421)	Other myocardial degeneration (422)	Other diseases of the heart (430-434)	Hypertensive disease (440-447)	Bronchitis (500-502)
100	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
99	96	95	107	105	107	98	103	93	116	102	108	84	99	100	116
109	103	97	111	106	96	108	100	103	109	105	102	98	96	107	115
109	96	100	101	86	95	107	99	101	87	100	88	101	100	95	95
104	106	102	95	100	98	99	96	108	91	101	93	116	102	101	92
89	102	109	86	91	96	99	101	101	82	92	97	111	103	96	74
120	**97**	**92**	**103**	**116**	**87**	**103**	**95**	**111**	**111**	**112**	**98**	**100**	**109**	**96**	**118**
131	87	92	104	123	94	93	90	115	102	118	78	97	106	100	106
116	97	95	105	118	86	97	99	108	107	112	96	93	98	96	119
117	102	89	100	112	85	112	95	112	118	110	108	105	117	93	123
123	**97**	**88**	**106**	**120**	**94**	**99**	**94**	**109**	**120**	**114**	**110**	**93**	**112**	**94**	**131**
126	103	99	126	93	95	86	88	109	114	113	97	86	103	112	131
134	99	86	102	137	81	85	93	113	118	128	106	86	101	93	118
116	102	85	97	117	87	105	95	113	125	104	118	114	118	88	145
116	82	88	116	120	123	113	96	97	116	116	109	68	122	96	121
111	93	91	119	136	78	114	91	105	124	111	88	94	109	90	132
131	90	97	108	88	77	96	97	108	99	111	79	104	104	95	119
119	103	91	93	123	85	111	97	118	106	105	93	114	105	97	105
111	99	102	89	94	84	99	99	115	87	106	85	100	109	104	82
105	**106**	**99**	**92**	**106**	**92**	**97**	**95**	**106**	**106**	**97**	**100**	**110**	**104**	**115**	**110**
124	113	93	86	114	90	92	89	110	128	111	128	104	96	132	109
99	112	102	96	97	94	102	97	104	94	89	91	115	110	114	102
97	98	100	92	108	91	96	97	105	101	94	89	109	104	105	117
95	99	99	92	122	90	76	94	105	110	94	86	102	89	115	131
114	105	100	100	97	94	112	103	106	119	105	118	103	99	121	125
113	100	84	106	86	78	130	94	105	104	103	95	89	123	121	115
118	115	93	95	106	97	89	86	110	108	98	97	119	109	118	107
89	105	108	77	104	71	102	100	103	90	91	103	115	108	106	85
89	**102**	**109**	**97**	**84**	**107**	**99**	**102**	**98**	**77**	**93**	**95**	**109**	**94**	**93**	**75**
81	91	109	98	88	120	97	102	95	73	91	91	102	101	90	75
91	106	110	104	94	105	105	106	96	78	96	103	100	89	91	75
95	113	108	89	83	100	92	102	103	82	92	90	135	90	108	72
88	98	109	97	69	101	106	101	97	72	94	95	94	94	80	79
103	109	99	114	94	109	101	103	99	92	102	100	96	86	108	95
96	97	106	97	85	109	105	103	96	75	95	90	104	91	87	77
84	103	114	96	80	108	97	102	101	70	93	90	114	96	93	73
81	101	111	89	83	104	98	103	95	75	88	98	113	97	88	65
82	**95**	**99**	**112**	**90**	**123**	**103**	**113**	**77**	**115**	**95**	**113**	**72**	**91**	**101**	**101**

Table C56. Age specific death rates in standard regions, and urban and rural England and Wales

	Malignant neoplasms including neoplasms of lymphatic and haematopoietic tissues (140-205)					
	All ages	0-	5-	15-	45-	65 and over
ENGLAND AND WALES	**22**	**0.90**	**0.68**	**3.0**	**33**	**103**
Urban and rural aggregates:						
Conurbations:	23	0.90	0.67	3.1	35	109
Areas outside conurbations:						
Urban areas with populations of 100,000 and over	23	0.91	0.60	3.1	35	108
Urban areas with populations of 50,000 and under 100,000	22	0.78	0.69	2.9	33	102
Urban areas with populations of under 50,000	22	0.86	0.67	2.9	31	100
Rural districts	20	1.0	0.73	2.7	29	95
NORTH OF ENGLAND	**22**	**0.92**	**0.62**	**3.1**	**35**	**104**
Standard regions:						
North	22	0.80	0.62	3.0	35	106
Yorkshire and Humberside	22	0.93	0.61	3.1	33	103
North West	23	0.97	0.63	3.1	35	104
Conurbations:	**23**	**0.90**	**0.60**	**3.2**	**36**	**108**
Tyneside	24	*0.85*	0.56	3.3	40	113
West Yorkshire	23	0.93	0.59	3.1	34	105
South East Lancashire	23	0.88	0.64	3.3	36	106
Merseyside	22	0.92	0.55	3.0	38	115
Areas outside conurbations:						
Urban areas with populations of 100,000 and over	24	0.97	0.51	3.3	37	108
Urban areas with populations of 50,000 and under 100,000	22	0.87	0.67	3.1	35	104
Urban areas with populations of under 50,000	22	0.93	0.66	2.9	32	100
Rural districts	19	1.1	0.69	2.7	30	94
WALES AND MIDLANDS	**20**	**0.83**	**0.60**	**2.9**	**32**	**101**
Standard regions:						
Wales	22	0.77	0.50	2.9	32	104
East Midland	20	0.84	0.68	2.8	31	99
West Midland	20	0.86	0.61	2.9	33	101
Conurbation:						
West Midlands	20	0.90	0.58	3.1	35	103
Areas outside conurbations:						
Urban areas with populations of 100,000 and over	22	0.98	0.59	3.0	35	108
Urban areas with populations of 50,000 and under 100,000	20	*0.83*	*0.51*	2.6	33	103
Urban areas with populations of under 50,000	21	0.73	0.62	2.9	31	100
Rural districts	19	0.79	0.64	2.7	29	95
SOUTH AND EAST OF ENGLAND (excluding Greater London)	**22**	**0.95**	**0.75**	**2.8**	**31**	**99**
Standard regions:						
South East (excluding Greater London):						
Outer Metropolitan	22	1.0	0.88	2.8	31	100
Rem. of South East	23	0.86	0.72	2.8	31	102
South West	22	0.90	0.63	2.9	31	97
East Anglia	20	1.0	0.76	2.9	30	100
Urban areas with populations of 100,000 and over	23	0.80	0.68	3.0	33	107
Urban areas with populations of 50,000 and under 100,000	22	0.82	0.76	2.9	32	100
Urban areas with populations of under 50,000	23	0.90	0.72	2.8	31	100
Rural districts	21	1.1	0.81	2.7	29	95
GREATER LONDON	**24**	**0.90**	**0.76**	**3.0**	**35**	**111**

aggregates within regional groups, for selected causes of death, 1963-1965,

Malignant neoplasm of buccal cavity and pharynx (140-148)						Malignant neoplasm of oesophagus (150)						Malignant neoplasm of stomach (151)					
All ages	0-	5-	15-	45-	65 and over	All ages	0-	5-	15-	45-	65 and over	All ages	0-	5-	15-	45-	65 and over
0.34	*0.00*	*0.01*	**0.04**	**0.42**	**1.8**	**0.53**	-	-	**0.03**	**0.66**	**2.9**	**2.8**	-	-	**0.18**	**3.5**	**15**
0.34	*0.00*	*0.01*	0.04	0.41	1.9	0.52	-	-	0.03	0.69	2.9	2.9	-	-	0.19	3.7	16
0.36	*0.01*	-	0.03	0.45	2.0	0.55	-	-	0.03	0.72	3.0	3.1	-	-	0.19	4.0	17
0.35	-	*0.01*	0.04	0.45	1.9	0.54	-	-	*0.03*	0.65	3.1	2.6	-	-	0.17	3.3	14
0.35	*0.00*	*0.02*	0.03	0.42	1.8	0.54	-	-	0.03	0.58	3.0	2.9	-	-	0.18	3.5	15
0.32	*0.00*	*0.00*	0.04	0.39	1.8	0.53	-	-	0.03	0.64	3.0	2.6	-	-	0.15	3.0	15
0.36	*0.00*	*0.01*	**0.04**	**0.45**	**2.0**	**0.53**	-	-	**0.03**	**0.65**	**3.0**	**3.2**	-	-	**0.19**	**4.1**	**17**
0.38	-	*0.01*	*0.04*	0.49	2.2	0.53	-	-	*0.02*	0.70	3.1	3.3	-	-	0.23	4.5	19
0.35	-	-	*0.03*	0.43	2.0	0.43	-	-	*0.02*	0.48	2.5	3.0	-	-	0.18	3.9	16
0.36	*0.01*	*0.01*	0.04	0.44	2.0	0.59	-	-	0.03	0.74	3.3	3.2	-	-	0.18	4.1	18
0.36	-	*0.01*	**0.04**	**0.46**	**2.0**	**0.55**	-	-	*0.02*	**0.72**	**3.1**	**3.2**	-	-	**0.19**	**4.2**	**18**
0.32	-	-	*0.03*	0.44	1.8	0.53	-	-	*0.03*	0.89	2.8	3.3	-	-	0.22	4.8	19
0.37	-	-	*0.02*	0.44	2.0	0.46	-	-	*0.03*	0.50	2.6	3.2	-	-	0.22	4.0	17
0.38	-	*0.02*	*0.05*	0.46	2.1	0.59	-	-	*0.02*	0.79	3.3	3.3	-	-	0.18	4.2	18
0.34	-	*0.01*	*0.06*	0.51	1.8	0.60	-	-	*0.02*	0.81	3.8	2.8	-	-	0.15	4.3	16
0.37	-	-	*0.02*	0.43	2.1	0.49	-	-	*0.02*	0.68	2.6	3.5	-	-	0.20	4.6	19
0.36	-	-	*0.06*	0.45	2.0	0.55	-	-	*0.03*	0.62	3.3	3.0	-	-	0.22	4.1	16
0.38	-	*0.02*	*0.02*	0.44	2.1	0.52	-	-	*0.03*	0.53	3.1	3.3	-	-	0.22	3.9	18
0.35	*0.02*	-	*0.04*	0.43	2.0	0.47	-	-	*0.03*	0.60	2.8	2.8	-	-	0.15	3.6	16
0.33	*0.00*	*0.00*	**0.04**	**0.43**	**1.9**	**0.52**	-	-	**0.04**	**0.69**	**3.0**	**2.9**	-	-	**0.17**	**3.9**	**17**
0.40	*0.02*	*0.01*	*0.05*	0.58	1.9	0.67	-	-	*0.04*	0.80	3.7	3.7	-	-	0.20	4.6	21
0.30	-	*0.01*	*0.04*	0.35	1.8	0.45	-	-	*0.03*	0.61	2.6	2.6	-	-	0.15	3.4	15
0.32	-	-	0.04	0.40	2.0	0.48	-	-	0.04	0.70	3.0	2.6	-	-	0.18	3.8	16
0.32	-	-	*0.05*	0.40	2.1	0.44	-	-	*0.04*	0.71	2.6	2.7	-	-	0.22	4.0	16
0.36	*0.02*	-	*0.04*	0.50	2.0	0.54	-	-	*0.04*	0.80	3.0	3.2	-	-	0.21	4.4	19
0.30	-	-	*0.06*	*0.31*	1.9	0.56	-	-	*0.04*	0.66	3.5	2.7	-	-	*0.12*	3.7	16
0.34	-	*0.02*	*0.03*	0.45	1.8	0.54	-	-	*0.04*	0.65	3.0	3.0	-	-	0.15	3.8	17
0.32	-	-	*0.04*	0.42	1.8	0.54	-	-	*0.03*	0.66	3.2	2.8	-	-	0.14	3.4	17
0.34	*0.00*	*0.01*	**0.03**	**0.40**	**1.7**	**0.56**	-	-	**0.03**	**0.63**	**3.0**	**2.5**	-	-	**0.16**	**2.8**	**13**
0.34	*0.01*	*0.03*	*0.03*	0.41	1.7	0.56	-	-	*0.02*	0.66	2.9	2.3	-	-	0.16	2.6	12
0.34	-	*0.01*	0.05	0.41	1.6	0.57	-	-	*0.03*	0.68	2.9	2.4	-	-	0.14	2.7	13
0.35	-	-	*0.02*	0.43	1.7	0.62	-	-	*0.03*	0.67	3.2	2.8	-	-	0.18	3.1	14
0.31	-	*0.01*	*0.03*	0.35	1.8	0.46	-	-	*0.03*	0.51	2.8	2.4	-	-	0.16	2.8	14
0.36	-	-	*0.03*	0.42	1.9	0.59	-	-	*0.02*	0.67	3.3	2.7	-	-	0.17	3.2	14
0.36	-	*0.02*	*0.02*	0.49	1.8	0.54	-	-	*0.02*	0.67	2.8	2.3	-	-	0.17	2.6	12
0.33	*0.01*	*0.02*	*0.03*	0.39	1.5	0.56	-	-	*0.03*	0.58	2.9	2.6	-	-	0.16	2.9	13
0.32	-	*0.01*	0.04	0.36	1.7	0.55	-	-	0.03	0.64	3.0	2.3	-	-	0.15	2.6	13
0.33	*0.01*	*0.01*	**0.04**	**0.37**	**1.8**	**0.51**	-	-	**0.02**	**0.66**	**2.7**	**2.7**	-	-	**0.18**	**3.3**	**14**

Table C56 - *(continued)*

	Malignant neoplasm of small intestine (including duodenum), large intestine and rectum (152-154)					
	All ages	0-	5-	15-	45-	65 and over
ENGLAND AND WALES	**3.1**	*0.00*	*0.00*	**0.24**	**3.5**	**18**
Urban and rural aggregates:						
Conurbations:	3.1	*0.00*	*0.00*	0.26	3.6	18
Areas outside conurbations:						
Urban areas with populations of 100,000 and over	3.2	-	*0.00*	0.25	3.6	18
Urban areas with populations of 50,000 and under 100,000	3.1	-	-	0.25	3.6	18
Urban areas with populations of under 50,000	3.3	-	*0.00*	0.23	3.5	18
Rural districts	2.9	-	*0.00*	0.23	3.2	17
NORTH OF ENGLAND	**3.2**	-	*0.00*	**0.28**	**3.6**	**18**
Standard regions:						
North	3.0	-	*0.01*	0.27	3.5	18
Yorkshire and Humberside	3.2	-	-	0.30	3.6	18
North West	3.2	-	*0.00*	0.27	3.7	18
Conurbations:	**3.2**	-	*0.01*	**0.31**	**3.7**	**19**
Tyneside	3.2	-	*0.03*	0.31	3.6	19
West Yorkshire	3.3	-	-	0.34	3.4	18
South East Lancashire	3.4	-	*0.01*	0.29	4.1	19
Merseyside	3.0	-	-	0.31	3.7	19
Areas outside conurbations:						
Urban areas with populations of 100,000 and over	3.3	-	-	0.27	4.1	18
Urban areas with populations of 50,000 and under 100,000	3.2	-	-	0.24	3.7	19
Urban areas with populations of under 50,000	3.2	-	-	0.27	3.4	18
Rural districts	2.8	-	*0.01*	0.24	3.3	17
WALES AND MIDLANDS	**3.0**	-	*0.00*	**0.24**	**3.6**	**18**
Standard regions:						
Wales	3.3	-	*0.01*	0.23	3.7	19
East Midland	2.9	-	-	0.25	3.5	18
West Midland	2.8	-	*0.00*	0.24	3.7	18
Conurbation:						
West Midlands	2.8	-	-	0.26	3.8	18
Areas outside conurbations:						
Urban areas with populations of 100,000 and over	3.0	-	-	0.27	3.6	18
Urban areas with populations of 50,000 and under 100,000	3.0	-	-	0.25	3.6	19
Urban areas with populations of under 50,000	3.3	-	*0.02*	0.21	3.8	19
Rural districts	2.7	-	-	0.23	3.3	17
SOUTH AND EAST OF ENGLAND (excluding Greater London)	**3.2**	-	*0.00*	**0.23**	**3.4**	**17**
Standard regions:						
South East (excluding Greater London):						
Outer Metropolitan	3.1	-	-	0.24	3.2	17
Rem. of South East	3.3	-	-	0.20	3.4	18
South West	3.3	-	-	0.21	3.5	17
East Anglia	3.1	-	*0.01*	0.25	3.4	18
Urban areas with populations of 100,000 and over	3.3	-	*0.01*	0.23	3.3	19
Urban areas with populations of 50,000 and under 100,000	3.2	-	-	0.26	3.6	17
Urban areas with populations of under 50,000	3.5	-	-	0.21	3.4	18
Rural districts	3.0	-	-	0.22	3.2	16
GREATER LONDON	**3.1**	*0.01*	-	**0.22**	**3.4**	**18**

Malignant neoplasms of larynx (161)						Malignant neoplasm of bronchus, trachea and lung (162,163)						Malignant neoplasm of breast (170)					
All ages	0-	5-	15-	45-	65 and over	All ages	0-	5-	15-	45-	65 and over	All ages	0-	5-	15-	45-	65 and over
0.16	-	-	**0.01**	**0.24**	**0.80**	**5.4**	*0.00*	*0.00*	**0.39**	**10**	**22**	**2.1**	-	-	**0.43**	**3.7**	**8.0**
0.17	-	-	0.01	0.25	0.83	6.3	*0.00*	*0.00*	0.48	12	26	2.1	-	-	0.44	3.8	8.3
0.18	-	-	*0.01*	0.26	0.92	5.7	*0.01*	*0.00*	0.42	11	23	2.1	-	-	0.49	3.6	8.1
0.15	-	-	*0.01*	0.26	0.73	5.1	-	-	0.38	10	21	2.1	-	-	0.41	3.9	7.9
0.17	-	-	*0.01*	0.23	0.85	4.8	-	*0.00*	0.33	9.0	19	2.1	-	-	0.45	3.7	7.9
0.13	-	-	*0.01*	0.19	0.65	4.1	*0.00*	*0.00*	0.31	8.2	17	1.9	-	-	0.38	3.5	7.6
0.18	-	-	**0.01**	**0.28**	**0.91**	**5.5**	*0.01*	*0.00*	**0.50**	**11**	**21**	**1.9**	-	-	**0.42**	**3.4**	**7.5**
0.19	-	-	*0.01*	0.33	0.96	5.4	*0.01*	*0.01*	0.50	12	22	1.7	-	-	0.41	3.2	6.8
0.17	-	-	*0.02*	0.26	0.82	5.2	-	*0.01*	0.46	10	20	1.9	-	-	0.42	3.3	7.8
0.19	-	-	*0.01*	0.27	0.95	5.8	*0.01*	-	0.52	12	22	2.0	-	-	0.43	3.5	7.6
0.19	-	-	*0.01*	**0.28**	**1.0**	**6.1**	*0.01*	*0.00*	**0.57**	**12**	**24**	**1.9**	-	-	**0.43**	**3.3**	**7.8**
0.19	-	-	*0.02*	*0.29*	0.99	6.9	-	-	0.70	15	27	1.8	-	-	0.51	3.4	6.9
0.19	-	-	*0.01*	0.27	0.94	5.5	-	*0.01*	0.47	11	21	2.0	-	-	0.40	3.1	8.6
0.19	-	-	*0.02*	0.29	0.90	6.0	*0.02*	-	0.63	12	23	2.0	-	-	0.45	3.4	7.8
0.20	-	-	*0.01*	0.27	1.3	6.5	-	-	0.53	14	29	1.8	-	-	0.40	3.4	7.5
0.19	-	-	*0.01*	0.31	0.90	6.2	*0.02*	*0.01*	0.64	13	23	2.0	-	-	0.49	3.5	7.4
0.20	-	-	*0.01*	0.37	0.88	5.5	-	-	0.53	11	22	1.8	-	-	0.35	3.4	6.9
0.18	-	-	*0.01*	0.27	0.89	4.9	-	-	0.36	10	19	1.9	-	-	0.40	3.4	7.2
0.13	-	-	*0.01*	0.20	0.69	3.8	-	-	0.31	8.0	16	1.8	-	-	0.39	3.5	7.2
0.14	-	-	*0.01*	**0.24**	**0.73**	**4.6**	*0.00*	*0.00*	**0.36**	**10**	**19**	**1.9**	-	-	**0.43**	**3.7**	**7.8**
0.17	-	-	*0.01*	0.23	0.86	4.5	-	-	0.33	8.2	19	2.0	-	-	0.37	3.6	7.3
0.14	-	-	*0.01*	0.23	0.69	4.5	*0.01*	-	0.36	9.0	19	1.9	-	-	0.44	3.5	7.9
0.13	-	-	*0.01*	0.26	0.67	4.7	-	*0.00*	0.38	11	20	1.9	-	-	0.45	3.8	8.1
0.16	-	-	*0.01*	0.32	0.73	5.3	-	-	0.44	12	22	1.9	-	-	0.45	3.8	8.5
0.18	-	-	*0.01*	0.24	1.0	5.4	-	-	0.33	11	23	2.0	-	-	0.49	3.6	8.0
0.12	-	-	*0.03*	*0.20*	*0.52*	4.8	-	-	0.31	10	21	1.8	-	-	0.39	3.7	7.2
0.15	-	-	*0.00*	0.25	0.76	4.3	-	-	0.37	8.3	18	2.0	-	-	0.46	3.8	7.7
0.11	-	-	*0.01*	0.18	0.57	3.7	*0.01*	*0.01*	0.32	7.6	16	1.8	-	-	0.35	3.5	7.6
0.15	-	-	*0.00*	**0.20**	**0.78**	**5.0**	-	*0.00*	**0.31**	**9.2**	**20**	**2.2**	-	-	**0.45**	**3.7**	**8.3**
0.16	-	-	*0.00*	0.19	0.86	5.3	-	*0.01*	0.30	9.4	21	2.3	-	-	0.45	4.0	8.5
0.16	-	-	*0.00*	0.24	0.77	5.4	-	-	0.30	10	21	2.2	-	-	0.44	3.6	8.3
0.15	-	-	*0.00*	0.23	0.64	4.6	-	*0.01*	0.29	8.3	17	2.3	-	-	0.40	3.8	8.4
0.14	-	-	*0.01*	0.15	0.85	4.7	-	-	0.34	9.2	20	2.0	-	-	0.50	3.4	8.0
0.18	-	-	*0.01*	0.24	0.87	5.6	-	-	0.33	11	23	2.2	-	-	0.50	3.6	8.7
0.15	-	-	-	0.22	0.71	5.0	-	-	0.33	9.3	20	2.3	-	-	0.44	4.2	8.6
0.17	-	-	*0.00*	0.17	0.87	5.2	-	*0.01*	0.28	9.1	20	2.3	-	-	0.48	3.8	8.5
0.14	-	-	*0.00*	0.20	0.67	4.5	-	*0.00*	0.31	8.6	18	2.0	-	-	0.39	3.5	7.8
0.15	-	-	*0.01*	0.21	0.73	**6.8**	-	*0.00*	**0.41**	**12**	**28**	**2.3**	-	-	**0.44**	**4.2**	**8.5**

Table C56 - *(continued)*

	Malignant neoplasm of cervix uteri (171)					
	All ages	0-	5-	15-	45-	65 and over
ENGLAND AND WALES	**0.53**	-	-	**0.19**	**0.99**	**1.7**
Urban and rural aggregates:						
Conurbations:	0.52	-	-	0.18	0.92	1.8
Areas outside conurbations:						
Urban areas with populations of 100,000 and over	0.57	-	-	0.22	1.1	1.8
Urban areas with populations of 50,000 and under 100,000	0.57	-	-	0.17	1.2	1.8
Urban areas with populations of under 50,000	0.56	-	-	0.20	1.1	1.7
Rural districts	0.46	-	-	0.18	0.94	1.4
NORTH OF ENGLAND	**0.62**	-	-	**0.22**	**1.2**	**2.1**
Standard regions:						
North	0.65	-	-	0.25	1.3	2.2
Yorkshire and Humberside	0.61	-	-	0.20	1.1	2.1
North West	0.62	-	-	0.21	1.2	2.0
Conurbations:	**0.64**	-	-	**0.22**	**1.2**	**2.1**
Tyneside	0.63	-	-	0.25	1.1	2.4
West Yorkshire	0.73	-	-	0.23	1.4	2.3
South East Lancashire	0.61	-	-	0.22	1.2	1.9
Merseyside	0.57	-	-	0.19	1.1	2.3
Areas outside conurbations:						
Urban areas with populations of 100,000 and over	0.58	-	-	0.23	0.97	2.1
Urban areas with populations of 50,000 and under 100,000	0.67	-	-	0.22	1.3	2.3
Urban areas with populations of under 50,000	0.63	-	-	0.22	1.2	2.0
Rural districts	0.56	-	-	0.21	1.2	1.7
WALES AND MIDLANDS	**0.53**	-	-	**0.21**	**1.1**	**1.7**
Standard regions:						
Wales	0.66	-	-	0.26	1.3	1.9
East Midland	0.50	-	-	0.18	1.0	1.6
West Midland	0.47	-	-	0.20	0.93	1.6
Conurbation:						
West Midlands	0.46	-	-	0.20	0.92	1.6
Areas outside conurbations:						
Urban areas with populations of 100,000 and over	0.58	-	-	0.23	1.2	1.8
Urban areas with populations of 50,000 and under 100,000	0.56	-	-	*0.16*	1.3	1.8
Urban areas with populations of under 50,000	0.61	-	-	0.25	1.1	2.0
Rural districts	0.45	-	-	0.17	0.94	1.4
SOUTH AND EAST OF ENGLAND (excluding Greater London)	**0.48**	-	-	**0.17**	**0.93**	**1.4**
Standard regions:						
South East (excluding Greater London):						
Outer Metropolitan	0.44	-	-	0.17	0.82	1.3
Rem. of South East	0.49	-	-	0.18	0.90	1.5
South West	0.52	-	-	0.16	1.1	1.3
East Anglia	0.45	-	-	0.17	0.85	1.5
Urban areas with populations of 100,000 and over	0.55	-	-	0.22	1.1	1.6
Urban areas with populations of 50,000 and under 100,000	0.51	-	-	0.16	1.1	1.5
Urban areas with populations of under 50,000	0.47	-	-	0.14	0.89	1.4
Rural districts	0.43	-	-	0.18	0.84	1.2
GREATER LONDON	**0.45**	-	-	**0.14**	**0.72**	**1.6**

Malignant neoplasm of corpus uteri and uterus unspecified (172-174)						Malignant neoplasm of prostate (177)						Malignant neoplasm of bladder (181.0)					
All ages	0-	5-	15-	45-	65 and over	All ages	0-	5-	15-	45-	65 and over	All ages	0-	5-	15-	45-	65 and over
0.31	*0.00*	-	**0.03**	**0.49**	**1.5**	**0.81**	*0.00*	*0.00*	*0.00*	**0.40**	**5.9**	**0.69**	*0.01*	*0.00*	**0.02**	**0.80**	**4.0**
0.30	*0.00*	-	0.03	0.48	1.4	0.74	-	*0.00*	*0.00*	0.38	5.6	0.73	*0.01*	-	0.03	0.87	4.3
0.32	-	-	0.03	0.48	1.6	0.78	-	-	-	0.45	5.6	0.77	*0.02*	*0.00*	*0.03*	0.88	4.5
0.30	-	-	*0.02*	0.46	1.4	0.82	-	-	-	0.39	5.9	0.70	-	-	*0.02*	0.80	4.1
0.34	-	-	0.03	0.53	1.6	0.88	-	-	*0.00*	0.41	6.0	0.69	*0.00*	-	0.02	0.76	3.8
0.31	-	-	0.03	0.48	1.5	0.87	*0.00*	*0.00*	*0.00*	0.38	6.5	0.59	-	-	0.02	0.65	3.5
0.30	*0.00*	-	**0.03**	**0.51**	**1.4**	**0.72**	-	*0.00*	*0.00*	**0.40**	**5.3**	**0.70**	*0.00*	-	**0.03**	**0.88**	**4.0**
0.25	-	-	*0.02*	0.48	1.2	0.69	-	-	*0.01*	0.34	5.4	0.67	*0.01*	-	*0.03*	0.92	4.0
0.30	-	-	*0.02*	0.47	1.5	0.76	-	*0.01*	*0.00*	0.45	5.4	0.72	-	-	*0.03*	0.86	4.1
0.32	*0.01*	-	0.04	0.55	1.4	0.72	-	-	*0.00*	0.40	5.1	0.69	-	-	*0.02*	0.87	3.9
0.29	*0.01*	-	**0.03**	**0.51**	**1.4**	**0.68**	-	*0.00*	*0.01*	**0.40**	**5.0**	**0.71**	-	-	**0.03**	**0.95**	**4.0**
0.30	-	-	*0.02*	0.52	1.5	0.74	-	-	*0.02*	0.39	5.7	0.82	-	-	*0.07*	1.3	4.3
0.32	-	-	*0.01*	0.51	1.5	0.71	-	*0.01*	*0.01*	0.46	4.8	0.73	-	-	*0.03*	0.93	3.8
0.31	*0.02*	-	*0.03*	0.55	1.4	0.67	-	-	*0.00*	0.38	4.9	0.66	-	-	*0.01*	0.85	3.8
0.23	-	-	*0.04*	0.42	1.1	0.64	-	-	-	0.35	5.2	0.72	-	-	*0.03*	0.98	4.5
0.29	-	-	*0.03*	0.43	1.4	0.73	-	-	-	0.45	5.2	0.82	-	-	*0.03*	0.92	4.8
0.27	-	-	*0.03*	0.45	1.3	0.76	-	-	-	0.45	5.6	0.72	-	-	*0.04*	0.90	4.2
0.33	-	-	*0.03*	0.54	1.4	0.75	-	-	*0.01*	0.35	5.4	0.66	*0.01*	-	*0.01*	0.82	3.6
0.29	-	-	*0.03*	0.57	1.3	0.78	-	-	-	0.41	6.0	0.59	-	-	*0.03*	0.68	3.6
0.31	-	-	**0.03**	**0.53**	**1.6**	**0.74**	-	*0.00*	*0.00*	**0.39**	**5.8**	**0.59**	*0.01*	-	**0.02**	**0.73**	**3.7**
0.35	-	-	*0.01*	0.69	1.5	0.77	-	*0.01*	*0.00*	0.40	5.4	0.60	*0.02*	-	*0.03*	0.73	3.3
0.33	-	-	*0.03*	0.49	1.8	0.78	-	-	-	0.37	6.1	0.64	*0.02*	-	*0.03*	0.73	3.9
0.27	-	-	*0.03*	0.46	1.5	0.69	-	-	*0.00*	0.40	5.9	0.56	-	-	*0.02*	0.72	3.7
0.27	-	-	*0.03*	0.53	1.3	0.67	-	-	*0.00*	0.32	6.0	0.55	-	-	*0.02*	0.78	3.6
0.31	-	-	*0.02*	0.52	1.6	0.75	-	-	-	0.49	5.7	0.66	*0.06*	-	*0.02*	0.83	4.0
0.29	-	-	*0.02*	0.48	1.5	0.62	-	-	-	0.35	4.9	0.67	-	-	*0.02*	0.86	4.2
0.35	-	-	*0.03*	0.60	1.6	0.74	-	-	-	0.39	5.4	0.65	-	-	*0.03*	0.70	3.9
0.31	-	-	*0.02*	0.48	1.7	0.82	-	*0.01*	*0.01*	0.39	6.4	0.50	-	-	*0.02*	0.60	3.2
0.33	-	-	**0.03**	**0.47**	**1.6**	**0.96**	*0.00*	-	*0.00*	**0.40**	**6.5**	**0.71**	-	*0.00*	**0.02**	**0.75**	**4.0**
0.30	-	-	*0.02*	0.42	1.4	0.97	-	-	*0.00*	0.43	6.4	0.73	-	-	*0.01*	0.80	4.0
0.35	-	-	*0.02*	0.50	1.6	0.99	-	-	*0.00*	0.37	6.6	0.77	-	*0.01*	*0.02*	0.81	4.2
0.38	-	-	*0.03*	0.49	1.8	0.99	*0.01*	-	*0.00*	0.42	6.4	0.68	-	-	*0.03*	0.66	3.7
0.30	-	-	*0.03*	0.45	1.5	0.87	-	-	-	0.38	6.5	0.66	-	-	*0.01*	0.71	4.1
0.35	-	-	*0.04*	0.49	1.7	0.85	-	-	-	0.42	5.8	0.83	-	*0.01*	*0.02*	0.88	4.7
0.31	-	-	*0.02*	0.46	1.5	0.93	-	-	-	0.37	6.3	0.71	-	-	*0.02*	0.72	4.0
0.35	-	-	*0.02*	0.48	1.6	1.1	-	-	*0.00*	0.46	6.7	0.74	-	-	*0.02*	0.76	3.9
0.32	-	-	*0.03*	0.45	1.6	0.94	*0.01*	-	*0.00*	0.36	6.7	0.64	-	-	*0.02*	0.67	3.7
0.30	-	-	**0.03**	**0.44**	**1.5**	**0.81**	-	-	*0.00*	**0.38**	**5.9**	**0.79**	*0.02*	-	*0.03*	**0.83**	**4.7**

Table C56 - *(continued)*

	Malignant neoplasm of bone (196)					
	All ages	0-	5-	15-	45-	65 and over
ENGLAND AND WALES	**0.11**	*0.01*	**0.04**	**0.05**	**0.13**	**0.44**
Urban and rural aggregates:						
Conurbations:	0.12	*0.01*	0.03	0.06	0.14	0.48
Areas outside conurbations:						
Urban areas with populations of 100,000 and over	0.12	*0.01*	*0.03*	0.04	0.16	0.49
Urban areas with populations of 50,000 and under 100,000	0.10	*0.02*	*0.04*	0.05	0.10	0.38
Urban areas with populations of under 50,000	0.12	*0.01*	0.05	0.06	0.12	0.44
Rural districts	0.10	*0.02*	*0.04*	0.05	0.13	0.38
NORTH OF ENGLAND	**0.13**	*0.01*	*0.03*	**0.06**	**0.17**	**0.52**
Standard regions:						
North	0.13	-	*0.04*	0.07	0.18	0.53
Yorkshire and Humberside	0.13	*0.01*	*0.02*	0.05	0.20	0.50
North West	0.13	*0.01*	*0.03*	0.06	0.14	0.53
Conurbations:	**0.13**	-	*0.02*	**0.06**	**0.18**	**0.55**
Tyneside	0.10	-	*0.03*	*0.04*	*0.13*	*0.46*
West Yorkshire	0.16	-	-	*0.05*	0.27	0.56
South East Lancashire	0.13	-	*0.03*	0.07	0.13	0.57
Merseyside	0.13	-	*0.04*	*0.06*	*0.16*	0.56
Areas outside conurbations:						
Urban areas with populations of 100,000 and over	0.15	*0.02*	*0.01*	*0.05*	0.21	0.66
Urban areas with populations of 50,000 and under 100,000	0.10	*0.03*	*0.02*	*0.06*	*0.13*	*0.34*
Urban areas with populations of under 50,000	0.14	-	*0.05*	0.07	0.15	0.57
Rural districts	0.10	*0.02*	*0.04*	*0.06*	0.15	0.33
WALES AND MIDLANDS	**0.12**	*0.00*	*0.03*	**0.05**	**0.13**	**0.53**
Standard regions:						
Wales	0.13	-	*0.04*	*0.05*	0.12	0.59
East Midland	0.11	-	*0.03*	0.05	0.14	0.42
West Midland	0.11	*0.01*	*0.03*	0.06	0.12	0.57
Conurbation:						
West Midlands	0.13	*0.02*	*0.01*	0.07	0.15	0.61
Areas outside conurbations:						
Urban areas with populations of 100,000 and over	0.11	-	*0.02*	*0.05*	0.15	0.43
Urban areas with populations of 50,000 and under 100,000	0.10	-	*0.03*	*0.04*	*0.07*	*0.56*
Urban areas with populations of under 50,000	0.12	-	*0.06*	0.06	0.11	0.49
Rural districts	0.11	-	*0.04*	*0.04*	0.11	0.57
SOUTH AND EAST OF ENGLAND (excluding Greater London)	**0.10**	*0.02*	**0.04**	**0.05**	**0.12**	**0.34**
Standard regions:						
South East (excluding Greater London):						
Outer Metropolitan	0.11	*0.02*	*0.06*	*0.04*	0.12	0.36
Rem. of South East	0.11	*0.03*	*0.03*	0.06	0.12	0.38
South West	0.10	*0.01*	*0.04*	0.05	0.11	0.35
East Anglia	0.08	-	*0.04*	*0.04*	0.11	0.28
Urban areas with populations of 100,000 and over	0.11	-	*0.06*	*0.04*	0.13	0.42
Urban areas with populations of 50,000 and under 100,000	0.10	*0.02*	*0.06*	*0.05*	*0.10*	0.35
Urban areas with populations of under 50,000	0.10	*0.02*	*0.03*	0.05	0.11	0.32
Rural districts	0.10	*0.02*	*0.03*	0.05	0.13	0.31
GREATER LONDON	**0.10**	*0.02*	*0.04*	**0.06**	**0.10**	**0.38**

Lymphosarcoma and reticulosarcoma (200)						Hodgkin's disease (201)						Leukaemia and Aleukaemia (204)					
All ages	0-	5-	15-	45-	65 and over	All ages	0-	5-	15-	45-	65 and over	All ages	0-	5-	15-	45-	65 and over
0.25	**0.03**	**0.06**	**0.10**	**0.38**	**0.89**	**0.18**	*0.00*	**0.03**	**0.17**	**0.25**	**0.36**	**0.60**	**0.38**	**0.29**	**0.23**	**0.69**	**2.2**
0.27	*0.03*	0.06	0.11	0.41	0.95	0.17	*0.00*	0.03	0.17	0.25	0.32	0.61	0.40	0.28	0.24	0.72	2.2
0.24	*0.05*	*0.07*	0.08	0.40	0.81	0.19	-	*0.02*	0.19	0.22	0.47	0.60	0.32	0.25	0.24	0.70	2.2
0.24	*0.01*	*0.05*	0.09	0.37	0.88	0.19	-	*0.02*	0.16	0.25	0.48	0.60	0.34	0.32	0.26	0.71	2.0
0.26	*0.04*	0.07	0.11	0.36	0.84	0.18	*0.00*	*0.02*	0.15	0.27	0.35	0.59	0.36	0.29	0.21	0.64	2.2
0.24	*0.03*	0.07	0.09	0.35	0.88	0.17	-	*0.03*	0.17	0.26	0.33	0.60	0.42	0.33	0.23	0.68	2.2
0.22	*0.03*	**0.06**	**0.10**	**0.33**	**0.74**	**0.18**	-	*0.03*	**0.16**	**0.27**	**0.36**	**0.56**	**0.40**	**0.28**	**0.22**	**0.70**	**1.9**
0.23	*0.03*	*0.05*	0.11	0.37	0.76	0.16	-	*0.01*	0.11	0.28	0.41	0.52	0.34	0.30	0.19	0.65	1.9
0.22	*0.03*	*0.07*	0.10	0.28	0.81	0.17	-	*0.02*	0.18	0.26	0.27	0.59	0.40	0.26	0.23	0.70	2.1
0.21	*0.03*	*0.05*	0.09	0.34	0.68	0.20	-	*0.04*	0.18	0.28	0.41	0.57	0.42	0.28	0.23	0.72	1.9
0.23	*0.02*	*0.05*	**0.11**	**0.35**	**0.82**	**0.17**	-	*0.02*	**0.17**	**0.27**	**0.31**	**0.55**	**0.41**	**0.24**	**0.22**	**0.71**	**1.9**
0.23	-	*0.08*	*0.10*	0.37	0.81	0.15	-	-	*0.12*	*0.29*	*0.25*	0.51	*0.40*	*0.23*	0.25	0.60	1.7
0.21	*0.02*	*0.04*	*0.10*	0.26	0.78	0.15	-	-	0.16	0.20	*0.30*	0.57	*0.41*	0.27	0.16	0.64	2.2
0.22	-	*0.05*	0.12	0.34	0.68	0.19	-	*0.04*	0.18	0.27	0.32	0.56	0.43	0.25	0.25	0.77	1.7
0.29	*0.07*	*0.04*	*0.11*	0.47	1.2	0.19	-	*0.04*	0.17	0.33	*0.34*	0.54	*0.40*	*0.19*	0.23	0.74	2.0
0.20	*0.05*	*0.05*	*0.08*	0.25	0.76	0.20	-	*0.01*	0.21	0.23	0.49	0.54	*0.34*	*0.24*	0.26	0.61	1.9
0.19	-	*0.03*	*0.05*	0.37	0.63	0.17	-	*0.03*	0.14	*0.20*	0.49	0.57	*0.29*	0.34	0.24	0.68	2.0
0.22	*0.03*	0.08	0.12	0.31	0.64	0.20	-	*0.02*	0.15	0.34	0.41	0.59	0.41	0.29	0.21	0.71	2.0
0.21	*0.06*	*0.06*	0.09	0.33	0.66	0.17	-	*0.05*	0.16	0.27	0.29	0.58	0.43	0.37	0.18	0.76	2.0
0.22	*0.02*	**0.06**	**0.09**	**0.35**	**0.83**	**0.17**	*0.00*	*0.02*	**0.15**	**0.25**	**0.37**	**0.55**	**0.35**	**0.26**	**0.22**	**0.65**	**2.1**
0.23	*0.02*	*0.04*	0.09	0.32	0.84	0.16	*0.02*	*0.02*	0.15	0.23	0.34	0.55	*0.29*	*0.16*	0.23	0.55	2.1
0.23	*0.02*	*0.06*	0.10	0.35	0.86	0.18	-	*0.02*	0.15	0.30	0.38	0.56	0.37	0.33	0.23	0.70	1.9
0.21	*0.02*	*0.07*	0.07	0.37	0.81	0.16	-	*0.02*	0.16	0.22	0.39	0.54	0.37	0.26	0.21	0.67	2.2
0.21	*0.05*	*0.06*	0.09	0.32	0.83	0.13	-	*0.03*	0.13	0.18	*0.27*	0.52	0.39	0.28	0.23	0.65	1.9
0.23	-	*0.08*	0.09	0.43	0.69	0.20	-	*0.01*	0.14	0.28	0.59	0.60	0.38	0.24	0.25	0.74	2.2
0.19	-	*0.03*	*0.06*	*0.26*	0.89	0.22	-	*0.03*	*0.18*	*0.30*	*0.67*	0.54	*0.37*	*0.27*	*0.16*	0.73	2.1
0.24	*0.01*	*0.07*	0.09	0.37	0.87	0.16	*0.01*	*0.02*	0.15	0.21	0.32	0.51	0.29	0.23	0.18	0.56	2.0
0.22	*0.03*	*0.05*	0.08	0.32	0.88	0.18	-	*0.02*	0.18	0.30	0.26	0.58	0.36	0.27	0.24	0.66	2.2
0.28	*0.04*	**0.07**	**0.10**	**0.40**	**0.96**	**0.18**	-	*0.02*	**0.17**	**0.23**	**0.37**	**0.64**	**0.38**	**0.33**	**0.24**	**0.68**	**2.2**
0.32	*0.05*	*0.08*	0.13	0.41	1.1	0.17	-	*0.02*	0.15	0.22	0.44	0.64	0.35	0.36	0.23	0.66	2.2
0.27	*0.01*	*0.08*	0.08	0.44	0.92	0.19	-	*0.01*	0.20	0.23	0.38	0.66	0.35	0.31	0.19	0.72	2.5
0.27	*0.05*	*0.07*	0.11	0.36	0.89	0.17	-	*0.03*	0.18	0.22	0.27	0.64	0.40	0.25	0.30	0.65	2.2
0.25	*0.05*	*0.04*	0.09	0.42	0.90	0.18	-	*0.03*	0.17	0.27	0.39	0.60	0.44	0.39	0.24	0.68	2.0
0.28	*0.09*	*0.08*	*0.06*	0.49	0.93	0.18	-	*0.03*	0.23	0.15	0.37	0.63	*0.26*	0.25	0.22	0.74	2.4
0.28	*0.02*	*0.06*	0.11	0.40	1.0	0.19	-	*0.01*	0.17	0.26	0.43	0.63	0.36	0.33	0.30	0.72	2.0
0.29	*0.06*	*0.06*	0.12	0.39	0.95	0.18	-	*0.02*	0.16	0.27	0.33	0.65	0.38	0.34	0.22	0.65	2.3
0.27	*0.02*	*0.08*	0.10	0.38	0.96	0.17	-	*0.03*	0.17	0.22	0.38	0.63	0.45	0.35	0.24	0.65	2.2
0.32	*0.03*	**0.08**	**0.12**	**0.47**	**1.1**	**0.19**	*0.01*	*0.04*	**0.17**	**0.26**	**0.34**	**0.68**	**0.39**	**0.33**	**0.26**	**0.76**	**2.5**

Table C56 - *(continued)*

	Vascular lesions affecting central nervous system (330-334)					
	All ages	0-	5-	15-	45-	65 and over
ENGLAND AND WALES	**16**	**0.09**	**0.05**	**0.55**	**9.7**	**113**
Urban and rural aggregates:						
Conurbations:	15	0.10	0.05	0.56	9.3	104
Areas outside conurbations:						
Urban areas with populations of 100,000 and over	17	0.13	*0.03*	0.54	10	117
Urban areas with populations of 50,000 and under 100,000	17	*0.10*	*0.06*	0.57	9.9	114
Urban areas with populations of under 50,000	19	0.08	0.05	0.58	10	123
Rural districts	16	*0.06*	0.06	0.51	9.3	116
NORTH OF ENGLAND	**18**	**0.12**	**0.05**	**0.65**	**11**	**125**
Standard regions:						
North	17	*0.10*	*0.03*	0.65	11	130
Yorkshire and Humberside	17	*0.15*	*0.06*	0.55	11	122
North West	18	*0.10*	*0.05*	0.72	12	125
Conurbations:	**17**	**0.12**	*0.06*	**0.64**	**11**	**122**
Tyneside	17	*0.09*	*0.05*	0.76	11	123
West Yorkshire	19	*0.14*	*0.09*	0.59	12	127
South East Lancashire	18	*0.14*	*0.05*	0.65	12	126
Merseyside	14	*0.07*	*0.03*	0.60	11	107
Areas outside conurbations:						
Urban areas with populations of 100,000 and over	17	*0.18*	-	0.58	11	118
Urban areas with populations of 50,000 and under 100,000	17	*0.15*	*0.07*	0.77	11	120
Urban areas with populations of under 50,000	20	*0.14*	*0.05*	0.66	12	133
Rural districts	18	*0.02*	*0.05*	0.63	10	132
WALES AND MIDLANDS	**16**	**0.11**	**0.05**	**0.60**	**11**	**120**
Standard regions:						
Wales	18	*0.05*	*0.06*	0.65	12	123
East Midland	16	*0.16*	*0.03*	0.52	10	120
West Midland	15	*0.11*	*0.06*	0.62	11	118
Conurbation:						
West Midlands	15	*0.13*	*0.06*	0.62	11	118
Areas outside conurbations:						
Urban areas with populations of 100,000 and over	16	*0.15*	*0.07*	0.59	11	119
Urban areas with populations of 50,000 and under 100,000	16	*0.23*	*0.08*	0.63	10	118
Urban areas with populations of under 50,000	18	*0.12*	*0.02*	0.68	11	125
Rural districts	16	*0.04*	*0.05*	0.49	10	117
SOUTH AND EAST OF ENGLAND (excluding Greater London)	**17**	*0.05*	**0.05**	**0.45**	**8.8**	**112**
Standard regions:						
South East (excluding Greater London):						
Outer Metropolitan	17	*0.06*	*0.06*	0.45	8.2	110
Rem. of South East	17	*0.08*	*0.06*	0.44	8.7	110
South West	19	*0.04*	*0.03*	0.51	9.9	117
East Anglia	16	*0.04*	*0.04*	0.41	8.5	113
Urban areas with populations of 100,000 and over	17	*0.07*	*0.01*	0.47	9.3	114
Urban areas with populations of 50,000 and under 100,000	17	*0.03*	*0.05*	0.44	9.0	109
Urban areas with populations of under 50,000	19	*0.02*	*0.06*	0.44	9.0	116
Rural districts	16	*0.09*	*0.06*	0.46	8.4	110
GREATER LONDON	**13**	*0.07*	*0.04*	**0.49**	**7.5**	**87**

Chronic rheumatic heart disease (410-416)						Arteriosclerotic heart disease, including coronary disease (420)						Chronic endocarditis not specified as rheumatic (421)					
All ages	0-	5-	15-	45-	65 and over	All ages	0-	5-	15-	45-	65 and over	All ages	0-	5-	15-	45-	65 and over
1.4	*0.00*	*0.01*	**0.45**	**2.4**	**4.7**	**23**	*0.01*	*0.00*	**1.3**	**27**	**132**	**0.62**	*0.00*	*0.00*	**0.05**	**0.63**	**3.6**
1.6	-	*0.01*	0.51	2.7	5.8	23	*0.00*	-	1.4	28	133	0.65	-	*0.01*	0.06	0.64	4.0
1.5	-	*0.01*	0.54	2.8	4.7	24	*0.01*	-	1.4	28	139	0.63	-	-	0.05	0.68	3.7
1.2	*0.01*	-	0.44	2.2	3.8	23	-	-	1.3	27	132	0.55	-	-	0.05	0.53	3.3
1.3	-	*0.01*	0.43	2.3	4.1	24	*0.00*	*0.00*	1.3	27	132	0.60	*0.01*	*0.00*	0.06	0.61	3.3
1.1	*0.02*	*0.00*	0.32	1.9	4.1	21	*0.02*	-	1.1	24	124	0.59	*0.01*	*0.00*	0.03	0.64	3.6
1.5	*0.00*	*0.01*	**0.61**	**2.9**	**4.5**	**25**	-	*0.00*	**1.6**	**32**	**143**	**0.59**	*0.01*	*0.01*	**0.06**	**0.66**	**3.4**
1.3	-	*0.01*	0.52	2.7	4.1	25	-	-	1.6	33	152	0.45	*0.02*	*0.01*	0.05	0.55	2.7
1.4	*0.01*	*0.01*	0.60	2.8	4.2	26	-	*0.01*	1.4	30	146	0.59	*0.01*	*0.01*	0.04	0.66	3.4
1.6	-	*0.01*	0.66	3.0	4.8	25	-	-	1.8	32	137	0.66	-	*0.01*	0.07	0.72	3.8
1.6	-	*0.01*	**0.66**	**3.1**	**4.8**	**25**	-	-	**1.7**	**33**	**143**	**0.66**	-	*0.01*	**0.06**	**0.75**	**3.8**
1.5	-	-	0.53	2.9	5.1	24	-	-	1.7	32	144	0.56	-	-	*0.09*	0.75	3.1
1.6	-	*0.01*	0.62	3.0	5.0	30	-	-	1.8	34	163	0.67	-	*0.01*	*0.06*	0.78	3.6
1.7	-	*0.02*	0.68	3.2	5.1	24	-	-	1.8	31	127	0.72	-	*0.01*	*0.06*	0.80	4.2
1.4	-	-	0.74	3.2	4.0	24	-	-	1.5	33	147	0.61	-	*0.01*	*0.08*	0.64	4.0
1.7	-	*0.01*	0.61	3.3	5.1	25	-	-	1.6	31	143	0.54	-	-	*0.05*	0.58	3.1
1.3	-	-	0.68	2.6	3.4	25	-	-	1.5	31	142	0.47	-	-	*0.04*	0.49	2.9
1.4	-	*0.01*	0.57	2.8	4.2	27	-	*0.01*	1.6	33	146	0.58	*0.01*	*0.01*	0.08	0.65	3.1
1.1	*0.02*	-	0.46	2.1	3.8	23	-	-	1.4	29	138	0.50	*0.04*	-	*0.02*	0.57	3.1
1.4	*0.00*	*0.00*	**0.51**	**2.6**	**4.7**	**21**	*0.01*	-	**1.3**	**26**	**127**	**0.58**	-	*0.00*	**0.06**	**0.72**	**3.4**
1.8	-	-	0.79	3.3	5.1	26	-	-	1.7	31	142	0.80	-	-	0.06	0.91	4.5
1.2	-	*0.01*	0.35	2.6	4.1	20	*0.03*	-	1.2	24	117	0.54	-	-	0.05	0.66	3.1
1.3	*0.01*	*0.00*	0.48	2.4	4.8	19	*0.01*	-	1.3	25	124	0.49	-	*0.00*	0.06	0.65	3.0
1.4	-	*0.01*	0.53	2.6	5.3	19	-	-	1.3	25	124	0.46	-	-	*0.06*	0.59	3.0
1.6	-	-	0.70	3.1	4.6	23	*0.04*	-	1.5	28	136	0.69	-	-	*0.08*	0.85	4.0
1.3	*0.05*	-	0.46	3.0	3.9	22	-	-	1.5	28	133	0.54	-	-	*0.05*	0.66	3.3
1.4	-	*0.01*	0.54	2.7	4.8	22	-	-	1.4	27	127	0.59	-	-	0.07	0.67	3.4
1.2	-	-	0.35	2.3	4.3	20	*0.03*	-	1.1	24	120	0.60	-	*0.01*	*0.04*	0.80	3.5
1.1	*0.01*	*0.01*	**0.27**	**1.8**	**4.0**	**23**	*0.01*	-	**1.0**	**23**	**126**	**0.62**	*0.00*	*0.00*	**0.03**	**0.56**	**3.6**
1.0	-	-	0.24	1.7	3.8	22	*0.01*	-	1.0	22	124	0.61	*0.01*	-	*0.02*	0.55	3.4
1.1	-	*0.01*	0.28	1.7	4.2	24	*0.02*	-	0.95	24	130	0.69	-	*0.01*	*0.04*	0.60	3.8
1.2	*0.01*	-	0.34	1.9	4.1	23	-	-	1.0	24	123	0.62	-	-	*0.03*	0.56	3.4
0.96	*0.02*	*0.02*	0.22	1.6	4.0	21	-	-	0.98	22	130	0.58	-	-	*0.04*	0.51	3.7
1.3	-	*0.01*	0.34	2.3	4.4	24	-	-	1.2	26	138	0.64	-	-	*0.02*	0.60	3.8
1.0	-	-	0.31	1.6	3.9	23	-	-	1.1	24	127	0.59	-	-	*0.05*	0.50	3.4
1.0	-	*0.01*	0.24	1.6	3.7	24	*0.01*	-	0.98	23	126	0.63	*0.01*	*0.01*	0.04	0.54	3.3
1.0	*0.02*	*0.01*	0.24	1.6	4.1	21	*0.02*	-	0.89	21	121	0.63	-	-	*0.02*	0.57	3.8
1.6	-	*0.00*	**0.40**	**2.4**	**6.6**	**22**	*0.01*	-	**1.1**	**25**	**128**	**0.71**	-	*0.01*	**0.05**	**0.57**	**4.5**

Table C56 - *(continued)*

	Other myocardial degeneration (422)					
	All ages	0-	5-	15-	45-	65 and over
ENGLAND AND WALES	**8.1**	**0.02**	*0.01*	**0.06**	**1.1**	**65**
Urban and rural aggregates:						
Conurbations:	6.5	*0.03*	*0.00*	0.06	0.90	54
Areas outside conurbations:						
Urban areas with populations of 100,000 and over	7.9	*0.01*	*0.00*	0.06	1.1	63
Urban areas with populations of 50,000 and under 100,000	8.4	*0.04*	*0.02*	0.06	1.2	66
Urban areas with populations of under 50,000	10	*0.02*	*0.01*	0.07	1.4	75
Rural districts	9.0	*0.01*	*0.01*	0.07	1.3	72
NORTH OF ENGLAND	**7.9**	*0.01*	*0.01*	**0.06**	**1.3**	**64**
Standard regions:						
North	7.3	*0.03*	*0.01*	*0.05*	1.1	63
Yorkshire and Humberside	7.4	*0.01*	*0.01*	0.04	1.2	60
North West	8.5	*0.01*	*0.01*	0.07	1.4	68
Conurbations:	**7.3**	*0.01*	*0.01*	**0.06**	**1.2**	**60**
Tyneside	6.4	*0.04*	-	*0.10*	0.96	55
West Yorkshire	7.2	-	*0.01*	*0.04*	1.1	55
South East Lancashire	9.0	-	*0.01*	0.07	1.6	73
Merseyside	4.9	-	-	*0.06*	0.94	44
Areas outside conurbations:						
Urban areas with populations of 100,000 and over	7.5	-	*0.01*	*0.04*	1.3	61
Urban areas with populations of 50,000 and under 100,000	8.1	*0.06*	*0.02*	*0.06*	1.5	67
Urban areas with populations of under 50,000	9.5	*0.03*	*0.01*	0.06	1.4	74
Rural districts	7.7	-	*0.01*	*0.05*	1.2	65
WALES AND MIDLANDS	**8.2**	*0.02*	*0.01*	**0.06**	**1.3**	**71**
Standard regions:						
Wales	8.6	*0.02*	*0.01*	*0.03*	1.2	67
East Midland	8.9	*0.02*	*0.01*	0.07	1.3	75
West Midland	7.5	*0.03*	-	0.07	1.4	70
Conurbation:						
West Midlands	6.8	*0.05*	-	*0.05*	1.3	66
Areas outside conurbations:						
Urban areas with populations of 100,000 and over	7.7	-	-	*0.07*	1.3	67
Urban areas with populations of 50,000 and under 100,000	6.5	*0.09*	*0.03*	*0.02*	0.97	58
Urban areas with populations of under 50,000	9.5	*0.03*	*0.01*	0.06	1.4	77
Rural districts	8.7	-	*0.01*	0.07	1.3	74
SOUTH AND EAST OF ENGLAND (excluding Greater London)	**9.7**	*0.02*	*0.01*	*0.08*	**1.2**	**70**
Standard regions:						
South East (excluding Greater London):						
Outer Metropolitan	9.2	*0.03*	*0.01*	0.08	0.96	66
Rem. of South East	9.2	*0.01*	*0.01*	0.08	0.94	65
South West	13	*0.01*	-	0.07	1.9	87
East Anglia	7.6	*0.01*	*0.02*	0.08	1.1	61
Urban areas with populations of 100,000 and over	8.2	*0.02*	-	*0.05*	0.89	62
Urban areas with populations of 50,000 and under 100,000	9.2	*0.02*	*0.02*	0.08	1.2	67
Urban areas with populations of under 50,000	11	*0.02*	*0.01*	0.09	1.4	74
Rural districts	9.7	*0.02*	*0.01*	0.07	1.3	73
GREATER LONDON	**5.8**	*0.04*	-	**0.05**	**0.54**	**47**

Other diseases of the heart (430-434)						Hypertensive disease (440-447)						Bronchitis (500-502)					
All ages	0-	5-	15-	45-	65 and over	All ages	0-	5-	15-	45-	65 and over	All ages	0-	5-	15-	45-	65 and over
3.0	**0.09**	**0.03**	**0.15**	**1.6**	**21**	**3.0**	*0.00*	*0.00*	**0.15**	**2.2**	**19**	**6.6**	**1.3**	**0.05**	**0.19**	**6.5**	**40**
2.9	0.09	*0.02*	0.16	1.6	21	2.9	-	*0.00*	0.16	2.2	19	7.5	1.5	0.04	0.21	7.4	46
2.9	*0.07*	*0.03*	0.15	1.6	20	3.2	*0.01*	-	0.15	2.4	21	7.5	1.6	*0.04*	0.23	7.6	45
3.1	*0.08*	*0.02*	0.15	1.7	21	2.8	-	-	0.12	2.3	18	6.3	1.0	*0.07*	0.19	6.3	37
3.3	0.08	*0.04*	0.15	1.6	22	3.2	*0.00*	-	0.14	2.3	20	6.4	1.1	0.06	0.18	6.1	36
3.1	0.13	*0.02*	0.14	1.5	22	2.8	*0.01*	-	0.13	2.2	19	4.8	0.88	0.08	0.15	4.4	30
3.2	**0.09**	*0.03*	**0.16**	**2.0**	**23**	**2.8**	-	*0.00*	**0.16**	**2.2**	**18**	**7.6**	**1.4**	**0.04**	**0.25**	**8.4**	**45**
3.0	*0.09*	*0.05*	0.19	2.0	22	2.8	-	-	0.15	2.2	20	6.5	0.79	*0.03*	0.24	7.9	40
2.9	*0.09*	*0.02*	0.13	1.7	21	2.8	-	*0.01*	0.13	2.1	19	7.7	1.6	*0.05*	0.25	7.8	47
3.5	*0.09*	*0.02*	0.16	2.3	24	2.7	-	-	0.19	2.3	17	8.1	1.6	*0.04*	0.27	9.0	46
3.3	*0.10*	*0.02*	**0.14**	**2.2**	**23**	**2.7**	-	*0.00*	**0.18**	**2.3**	**18**	**8.4**	**1.5**	*0.03*	**0.26**	**9.3**	**50**
2.9	*0.04*	*0.05*	0.20	1.9	21	3.1	-	-	*0.16*	2.3	22	8.0	*0.85*	*0.03*	0.21	9.7	50
3.1	*0.07*	*0.03*	0.11	2.0	21	2.8	-	*0.01*	0.13	2.3	17	8.0	0.79	*0.03*	0.25	7.7	47
3.5	*0.15*	*0.02*	0.15	2.4	24	2.5		-	0.22	2.4	16	9.4	1.4	*0.04*	0.31	10	55
3.3	*0.07*	*0.01*	0.14	2.0	26	2.6	-	-	0.20	2.2	18	7.2	2.9	*0.01*	0.22	9.2	44
3.2	*0.05*	*0.01*	0.15	2.0	23	2.6	-	-	0.14	2.0	18	8.6	1.6	*0.07*	0.33	9.4	50
3.0	-	*0.03*	0.23	1.9	21	2.7	-	-	0.17	2.5	17	7.6	1.3	*0.10*	0.31	8.4	45
3.2	*0.11*	*0.04*	0.20	1.9	22	2.9	-	-	0.14	2.0	19	7.1	1.4	*0.05*	0.22	7.6	40
3.1	*0.13*	*0.03*	0.12	1.8	23	2.9	-	-	0.15	2.2	21	5.2	1.2	*0.03*	0.17	5.4	32
2.9	**0.10**	*0.02*	**0.16**	**1.7**	**22**	**3.2**	*0.01*	*0.00*	**0.17**	**2.7**	**22**	**6.8**	**1.3**	**0.06**	**0.23**	**7.2**	**44**
2.9	*0.12*	*0.03*	0.20	1.7	20	3.9	*0.02*	-	0.18	3.2	25	7.3	1.2	*0.06*	0.19	7.0	44
3.2	*0.05*	*0.02*	0.14	1.6	24	3.2	*0.02*	-	0.14	2.6	22	6.4	1.8	*0.09*	0.25	6.2	41
2.7	*0.11*	*0.02*	0.16	1.7	22	2.7	-	*0.00*	0.17	2.5	20	6.8	1.0	*0.03*	0.23	8.0	46
2.3	*0.08*	*0.03*	0.16	1.6	18	2.9	-	*0.01*	0.20	2.8	22	7.4	1.5	*0.02*	0.28	9.2	50
2.8	*0.06*	*0.03*	0.20	1.7	21	3.3	*0.02*	-	0.16	2.8	23	7.8	1.8	*0.06*	0.27	8.2	49
3.4	*0.09*	-	*0.16*	1.9	27	3.2	-	-	0.13	3.1	23	7.0	0.92	*0.03*	*0.15*	7.4	47
3.2	*0.08*	*0.04*	0.14	1.8	23	3.4	*0.01*	-	0.16	2.7	23	7.0	1.1	*0.07*	0.22	6.8	43
3.1	*0.15*	-	0.17	1.6	23	2.9	*0.01*	-	0.16	2.6	20	5.3	1.1	*0.08*	0.18	4.9	35
3.1	**0.10**	*0.03*	**0.12**	**1.4**	**20**	**2.9**	*0.00*	-	**0.12**	**2.1**	**18**	**5.3**	**0.89**	**0.07**	**0.13**	**4.4**	**30**
3.4	*0.10*	*0.03*	0.13	1.4	22	2.9	-	-	0.12	1.9	18	5.4	0.99	*0.12*	0.15	4.3	31
3.0	*0.10*	*0.02*	0.13	1.3	19	2.9	-	-	0.12	2.0	18	5.4	1.1	*0.06*	0.11	4.6	30
3.1	*0.07*	*0.03*	0.11	1.4	19	3.6	*0.01*	-	0.13	2.6	21	5.2	0.62	*0.05*	0.16	4.5	29
2.8	*0.13*	*0.04*	0.10	1.3	20	2.3	-	-	0.09	1.7	16	5.1	0.82	*0.03*	0.10	4.4	33
2.7	*0.10*	*0.03*	0.11	1.3	18	3.4	-	-	0.15	2.4	21	6.6	1.4	*0.02*	0.14	5.7	39
3.0	*0.13*	*0.02*	0.10	1.4	19	2.7	-	-	0.10	1.9	17	5.3	0.92	*0.06*	0.14	4.7	31
3.3	*0.07*	*0.05*	0.13	1.4	21	3.1	-	-	0.13	2.1	18	5.4	0.98	*0.07*	0.13	4.5	29
3.1	*0.11*	*0.02*	0.13	1.4	21	2.7	*0.01*	-	0.10	1.9	17	4.4	0.59	*0.09*	0.12	3.6	27
2.8	*0.07*	*0.02*	**0.17**	**1.2**	**20**	**3.0**	-	-	**0.14**	**1.9**	**20**	**6.8**	**1.6**	*0.05*	**0.14**	**5.6**	**42**

GREATER LONDON

The administrative changes in the London area which took effect on April 1st 1965 are likely to have a great effect on the use made of vital statistics from the Greater London Conurbation. The new expanded area represented by the Greater London Council includes now almost the whole of the county of Middlesex, with substantial additions from Essex, Surrey and Kent, and a small accretion from Hertfordshire, with the former administrative county of London now represented by Inner London, which still retains its identity as an Education Authority. It is now possible to publish detailed causes of death for all the local Health Authorities in the Greater London area and the newly formed boroughs will have a sufficient population and uniformity of size to make comparison a fruitful exercise.

One disadvantage of the change has been the interruption of long-standing series of tables and data, including those published in Part I of the *Registrar General's Statistical Review* as Table 21 and the London table in the *Weekly Return.* In order to provide continuous historic data with which current and future statistics may be compared, an attempt has been made to create a few key statistics which are applicable to the new London boroughs for past years. These include density of population, crude birth and death rates with infant and perinatal mortality (stillbirths plus deaths under one week of age) for all the new London boroughs. In addition, data on cause of death from Table 21 of *the Statistical Review,* Part I, for the years 1959-61, 1962-64 and 1965 have been assembled for a few of the larger and more important disease groups and are presented in Table C60 as rates per 100,000 population.

The results of the 1966 census will enable more precise estimates to be made of population and population density. In a few instances, where the amalgamation of several small areas has produced a new London borough with no change of boundaries, completely accurate figures can be produced. But for several boroughs the complexity of the interchange of population has made it necessary to use estimates only of the component populations and rates; the accuracy of the rates so calculated depends to varying degrees on the assumptions made.

The allocation of former boroughs to form the new London boroughs, used for the purpose of this exercise, is set out in Table C57 but this Table does not claim to represent the whole complexity of the interchange which took place. It is a simplification used for this present purpose, and could be improved upon in the light of local knowledge, or information derived from census data not yet available.

Table C57. Approximate composition of London Boroughs and Metropolitan Hospital Board Regions in terms of former boroughs and districts *as used for calculating statistics in Tables C58 and C59*

(for symbols used, see end of table)

OUTER LONDON in N.W. Metropolitan Hospital Board Region			OUTER LONDON in N.E. Metropolitan Hospital Board Region		
BARNET	East Barnet	(H)	Barking	(E)	BARKING
	Barnet	(H)	Dagenham	(E)	
	Finchley	(M)			
	Friern Barnet	(M)	Edmonton	(M)	*ENFIELD
	Hendon	(M)	Enfield	(M)	
			Southgate	(M)	
BRENT	Wembley	(M)			
	Willesden	(M)	Hornchurch	(E)	HAVERING
			Romford	(E)	
EALING	Acton	(M)			
	Ealing	(M)	East Ham	(E)	NEWHAM (a)
	Southall	(M)	West Ham	(E)	
*HARINGEY	Hornsey	(M)	Ilford	(E)	REDBRIDGE (b)
	Tottenham	(M)	Wanstead and		
	Wood Green	(M)	Woodford	(E)	
HARROW	Harrow	(M)	Chingford	(E)	WALTHAM
			Leyton	(E)	FOREST
HILLINGDON	Hayes and		Walthamstow	(E)	
	Harlington	(M)			
	Ruislip-				
	Northwood	(M)			
	Uxbridge	(M)			
	Yiewsley and				
	West Drayton	(M)			
HOUNSLOW	Brentford and				
	Chiswick	(M)			
	Feltham	(M)			
	Heston and				
	Isleworth	(M)			
RICHMOND-	Barnes	(S)			
UPON-THAMES	Richmond	(S)			
	Twickenham	(M)			

Table C57 - *(continued)*

INNER LONDON in N.W. Metropolitan Hospital Board Region

CAMDEN	Hampstead Holborn St. Pancras
ISLINGTON	Finsbury Islington
*WESTMINSTER	Paddington St. Marylebone Westminster

INNER LONDON in N.E. Metropolitan Hospital Board Region

Hackney Stoke Newington Shoreditch	HACKNEY
Bethnal Green Stepney Poplar	TOWER HAMLETS

INNER LONDON in S.W. Metropolitan Hospital Board Region

*HAMMERSMITH	Fulham Hammersmith
*KENSINGTON and CHELSEA	Chelsea Kensington
LAMBETH	Lambeth Wandsworth (1/3)
WANDSWORTH	Battersea Wandsworth (2/3)

INNER LONDON in S.E. Metropolitan Hospital Board Region

Greenwich Woolwich	GREENWICH
Deptford Lewisham	LEWISHAM
Bermondsey Camberwell Southwark	SOUTHWARK

Table C57 - *(continued)*

OUTER LONDON in S.W. Metropolitan Hospital Board Region			OUTER LONDON in S.E. Metropolitan Hospital Board Region		
CROYDON	Croydon	(S)	Bexley	(K)	BEXLEY
	Coulsdon and Purley	(S)	Chislehurst and Sidcup ($\frac{1}{2}$)	(K)	
KINGSTON-UPON-THAMES	Kingston-upon-Thames	(S)	Crayford	(K)	
	Malden and Coombe	(S)	Erith	(K)	
	Surbiton	(S)	Beckenham	(K)	BROMLEY
MERTON	Merton and Morden	(S)	Bromley	(K)	
	Mitcham	(S)	Chislehurst and Sidcup ($\frac{1}{2}$)	(K)	
	Wimbledon	(S)	Orpington	(K)	
SUTTON	Beddington and Wallington	(S)	Penge	(K)	
	Carshalton	(S)			
	Sutton and Cheam	(S)			

* These areas are not entirely in the stated regions, but they have been so included for the purpose of these and other statistics.

(E) from Essex

(H) from Hertfordshire

(K) from Kent

(M) from Middlesex

(S) from Surrey

(a) includes also parts of Barking and Woolwich, which have been omitted for the purpose of these statistics.

(b) includes also parts of Chigwell and Dagenham, which have been omitted for the purpose of these statistics.

London Boroughs

The full utilization of the detailed vital statistics now available for the whole London area requires comparable detail in other information bearing upon the environment, life and living conditions of the population, and these are not readily obtainable. At census time a number of factors are recorded from which indexes of overcrowding, housing conditions, industry, occupation, educational standards and the like can be formulated; these have only been prepared at ten year intervals in the past, and may not be published until well after the event. Special surveys such as the National Survey of Smoke and Sulphur Dioxide provide results which can be allocated to local authority areas; and other published data such as that bearing

on the composition of water-supplies can rather less easily be moulded to the same form. For many of the important factors - food, fuel utilization, consumption of tobacco or alcohol - even data for whole regions is only partial or almost completely absent.

There are however annual data based on local authority areas which might be useful for this purpose. The expenditure of money by counties and county boroughs each year on health services is tabulated in some detail by the National Institution of Municipal Treasurers[1] and information on the rates, rateable values and type of properties is given for every urban and rural district by the Ministry of Housing and Local Government[2]. These latter have been abstracted in an endeavour to prepare indexes of value for confrontation with the vital statistics of the London Boroughs.

The total rateable value of Greater London for the year 1965-1966 amounted to £628.8 million but this was unequally distributed between the component boroughs, and not completely in proportion to the population. The City of London, for example, accounted for £43.8 million (seven per cent) of the rateable value although the population upon which vital statistics are based is only 0.06 per cent of the whole. Similarly the London Borough of Westminster accounts for 16.5 per cent of the total rateable value of the whole of Greater London but only 3.4 per cent of population.

The reason for these discrepancies is seen when the nature of the rateable properties is considered. Houses are not the only source of rateable value, but only one among many. The component parts for Greater London (1965-66) were:

	£ million
Domestic	261
Industrial	74
Offices	92
Shops	66
Other commercial	53
Crown	32
Other	51

Not only are the non-domestic properties unequally distributed between the boroughs, but their presence can influence the price of land and the desirability of living in the neighbourhood.

A crude index formed by dividing the total rateable value of a borough by the population yields very erratic results. The median value is £57.4 but the range is from £40.7 (Lewisham) to £957 in the City or £385 in Westminster. A more appropriate index for housing conditions is obtained by using the average rateable value of

---

(1) *Local Health Services Statistics*, National Institution of Municipal Treasurers.

(2) *Rates and Rateable Values in England and Wales*, Parts I and II Ministry of Housing and Local Government and Welsh Office, H.M.S.O.

domestic property only. This puts Kensington and Chelsea top of the list (£249) and Westminster second (£232), with Newham (£71.8) and Barking (£72.4) having the lowest average domestic rateable values. The median for all Greater London boroughs is £107.

An alternative approach is to express the total domestic rateable value for each area in terms of population. This method reduces the gap between extreme values slightly. Westminster (at £73.2 per head) and Kensington and Chelsea (£67.4 per head) are still head of the list; and Newham (£20.6) and Barking (£22.2) are still the lowest. The relative ranking order of boroughs is changed to some extent, as the size of family and number of households included in one property may vary between boroughs. The ratio of average value of each domestic property to average value per head of population ranges from 4.8 in Islington to 3.2 in Westminster and 3.1 in several outlying suburbs: this ratio is, in fact, the average size of household in each borough.

The amount of industrial development within a borough may be estimated from industry's contribution to the rates, although it does not give any indication of the nature of the industry. The proportion of the total rateable value arising from industrial property is highest in Barking (36.0 per cent) but is only one half per cent of the rateable value for Westminster. The paucity of industry in Westminster is however counterbalanced by its pre-eminent position for shops, offices and other commercial properties, and it is likely that the presence of these combined with the absence of industry are responsible for the high values recorded for the borough. To what extent competition for limited space, deliberate choice, or other unidentifiable factors are controlling agents may be difficult to disentangle.

It is evident that rateable values offer a tempting tool for epidemiological research, but that they must be used with care and with their limitations vis-a-vis specific problems kept clearly in mind.

Table C58. London Boroughs - indexes based on rateable values, 1965-1966

	Total value per population	Proportion industrial	Average value domestic property	Domestic value per population	Total rateable values
	£ per head	per cent	£ per property	£ per head	£ million
INNER LONDON					
Camden	136	5.8	167	41.7	33.2
Greenwich	55.0	16.0	83.1	25.4	12.7
Hackney	56.5	22.1	103	26.4	14.4
Hammersmith	64.6	15.1	112	28.7	14.0
Islington	75.4	14.4	110	23.1	19.6
Kens. & Chelsea	117	1.9	249	67.4	25.6
Lambeth	57.4	6.9	101	27.0	19.6
Lewisham	40.7	7.8	90.0	26.1	11.9
Southwark	58.3	15.8	78.8	22.4	18.1
Tower Hamlets	71.3	26.8	78.1	23.1	14.7
Wandsworth	46.7	10.0	97.3	27.2	15.6
Westminster	385	0.5	232	73.2	104
City	957	2.9	146	38.3	43.8
OUTER LONDON					
Barking	57.0	36.0	72.4	22.2	10.0
Barnet	68.6	6.5	150	46.3	21.8
Bexley	47.4	16.4	89.9	28.8	10.2
Brent	66.9	27.9	107	30.7	19.8
Bromley	51.1	7.1	109	34.4	15.4
Croydon	56.0	9.9	107	32.5	18.4
Ealing	75.5	29.4	109	31.9	23.0
Enfield	64.5	22.9	110	35.2	17.4
Haringey	51.5	16.9	105	29.0	13.3
Harrow	52.6	5.8	113	35.5	11.1
Havering	46.5	12.9	88.5	26.7	11.6
Hillingdon	68.4	20.6	101	30.5	15.9
Hounslow	73.2	27.3	98.0	29.8	15.2
Kingston-upon-Thames	65.5	10.7	110	35.4	9.6
Merton	58.9	17.8	108	35.2	11.0
Newham	55.6	27.6	71.8	20.6	14.6
Redbridge	50.0	7.9	106	32.6	12.4
Richmond upon Thames	56.8	5.5	118	37.4	10.3
Sutton	54.7	8.6	112	35.9	9.2
Waltham Forest	47.3	18.1	85.8	27.1	11.5
GREATER LONDON	**78.7**	**11.8**	**112**	**32.7**	**629**

Table C59. London Boroughs - historical vital statistics, 1959-1965

LONDON BOROUGH		POPULATION		BIRTH RATE (annual)			DEATH RATE (annual)			INFANT MORTALITY			PERINATAL MORTALITY		
		Number 1961	Density per Acre 1961	per 1,000 population			per 1,000 population			per 1,000 live births			per 1,000 total births		
				1959-61	1962-64	1965	1959-61	1962-64	1965	1959-61	1962-64	1965	1959-61	1962-64	1965
INNER LONDON															
Camden	(06)	245,707	45.8	17.1	18.1	16.5	10.8	10.8	10.2	25.9	24.1	19.3	32.2	28.6	26.7
Greenwich	(10)	229,610	19.6	14.5	16.4	15.9	10.5	11.1	11.0	18.8	21.0	21.7	29.1	27.5	32.8
Hackney	(11)	257,522	53.5	20.2	23.1	23.0	11.6	11.7	11.1	20.9	21.4	18.7	32.1	29.4	24.7
Hammersmith	(12)	222,124	55.6	18.1	20.3	20.5	11.4	11.8	11.4	21.4	22.6	19.5	33.4	30.2	26.4
Islington	(18)	261,232	71.0	22.6	24.3	23.6	11.2	11.2	11.4	21.2	19.6	21.5	31.7	29.7	28.9
Kensington and Chelsea	(19)	218,528	74.0	17.8	17.8	16.9	11.1	11.0	10.8	21.4	23.9	22.1	29.3	30.1	25.1
Lambeth	(21)	341,626	50.7	19.8	22.5	21.9	12.3	12.3	10.9	22.1	21.6	23.5	33.1	28.2	29.1
Lewisham	(22)	290,582	33.9	17.0	19.3	19.9	11.6	11.5	11.9	20.0	21.5	23.5	30.4	26.2	28.6
Southwark	(27)	313,413	44.0	18.0	19.7	18.9	12.1	12.1	12.1	23.8	20.4	20.5	31.2	28.2	25.8
Tower Hamlets	(29)	205,682	42.2	18.7	19.7	18.9	11.8	11.8	11.1	23.0	22.0	19.6	34.5	30.1	25.0
Wandsworth	(31)	335,456	38.9	17.1	19.6	19.4	13.6	13.5	13.4	20.7	20.8	22.2	30.2	28.0	28.0
Westminster	(32)	271,703	50.9	15.2	16.3	14.6	12.1	12.1	10.5	22.0	21.2	19.0	31.2	29.8	25.3
NORTH WEST															
Barnet	(02)	318,513	14.4	13.5	15.0	15.4	11.2	11.5	11.4	21	17	13	32	25	20
Brent	(04)	295,893	27.1	18.0	20.2	21.8	9.9	10.4	10.0	16	18	20	27	28	29
Ealing	(08)	301,646	22.0	15.7	17.8	18.3	11.4	11.9	11.4	19	18	18	29	26	25
Haringey	(13)	259,156	34.6	17.3	21.5	21.6	11.9	12.2	11.2	24	22	18	32	30	26
Harrow	(14)	209,080	16.7	14.3	15.6	15.7	9.8	10.0	9.7	17	17	10	26	25	20
Hillingdon	(16)	228,370	8.4	16.3	17.0	16.7	8.4	8.9	9.0	19	17	11	29	25	19
Hounslow	(17)	208,893	14.4	14.9	16.7	17.0	10.0	10.5	10.3	20	17	16	30	23	24
Richmond	(26)	181,052	13.3	13.2	14.5	15.0	10.9	11.7	11.5	18	17	14	28	22	19
SOUTH WEST															
Croydon	(07)	327,427	13.7	15.9	17.3	17.4	12.2	12.2	11.8	18	16	18	26	25	23
Kingston-upon-Thames	(20)	146,010	15.7	13.8	15.6	16.1	10.8	11.6	10.6	16	17	13	26	23	21
Merton	(23)	189,013	20.2	13.9	15.7	15.6	12.7	12.9	12.0	16	17	15	24	23	25
Sutton	(28)	169,095	15.8	13.2	14.5	15.0	10.9	11.7	11.5	18	17	14	28	22	19
NORTH EAST															
Barking	(01)	177,092	21.0	13.4	14.1	13.9	8.6	9.6	10.1	22	20	17	34	29	30
Enfield	(09)	273,857	13.7	13.7	14.8	15.7	11.2	11.3	11.5	20	18	18	29	25	23
Havering	(15)	245,598	8.4	18.4	17.6	17.3	8.0	8.3	8.4	20	17	14	29	28	24
Newham	(24)	265,388	29.5	16.7	19.2	19.9	10.6	11.2	11.1	22	21	20	33	32	31
Redbridge	(25)	250,080	17.9	13.4	15.3	15.4	11.4	11.8	11.5	18	17	17	29	25	26
Waltham Forest	(30)	248,591	25.4	13.2	15.3	16.1	11.9	12.5	12.0	19	18	20	29	26	28
SOUTH EAST															
Bexley	(03)	209,893	14.0	15.2	16.7	17.6	9.1	9.7	9.6	17	17	15	27	27	23
Bromley	(05)	294,440	7.5	15.7	16.4	16.2	10.6	10.9	10.3	17	16	16	27	23	26

Table C60. Death rates per 100,000 population for selected causes in area of

	Respiratory tuberculosis			Malignant neoplasm of stomach			Malignant neoplasm of lung and bronchus			Malignant neoplasm of breast			Malignant neoplasm of uterus			Leukaemia and aleukaemia			Diabetes			Coronary disease, angina		
R.G's Abridged List No.	1			10			11			12			13			15			16			18		
	1959-61	1962-64	1965	1959-61	1962-64	1965	1959-61	1962-64	1965	1959-61	1962-64	1965	1959-61	1962-64	1965	1959-61	1962-64	1965	1959-61	1962-64	1965	1959-61	1962-64	1965
INNER LONDON																								
Camden	7	6	4	29	27	21	59	69	75	22	22	25	12	10	6	6	6	7	6	9	7	205	229	230
Greenwich	9	6	6	30	34	23	55	63	79	18	22	20	9	8	4	6	6	6	5	7	7	201	236	238
Hackney	11	7	3	37	30	33	64	67	67	23	27	26	8	8	9	7	6	4	9	11	12	189	242	229
Hammersmith	6	6	7	28	32	28	78	79	82	20	22	21	11	8	10	6	6	7	7	7	10	199	221	238
Islington	8	5	6	29	27	29	78	74	74	18	17	23	9	8	7	5	7	4	6	9	7	187	206	203
Kensington and Chelsea	8	5	3	23	22	22	51	54	62	25	23	22	10	11	9	8	8	4	5	7	6	184	197	206
Lambeth	10	8	6	27	26	25	68	71	73	24	22	19	9	11	6	6	6	5	7	6	6	202	221	222
Lewisham	7	6	6	32	29	26	67	73	81	21	23	23	8	7	7	6	7	8	8	7	4	207	231	256
Southwark	10	8	6	32	30	28	72	74	82	19	20	21	9	7	7	5	6	7	7	8	8	193	222	227
Tower Hamlets	12	9	10	35	35	41	70	79	72	21	20	21	8	7	5	5	6	7	10	13	10	192	221	205
Wandsworth	8	7	4	30	29	25	67	72	72	24	25	25	9	9	9	6	8	7	7	8	9	207	229	242
Westminster	10	9	6	24	24	21	71	71	64	27	27	24	11	10	9	7	7	8	7	7	6	209	250	228
North West																								
Barnet	5	4	3	26	25	20	55	59	63	25	28	21	7	6	4	6	6	9	6	9	12	194	230	256
Brent	5	5	2	27	24	26	61	66	67	24	23	21	9	7	7	6	6	8	7	7	8	185	217	209
Ealing	5	5	3	29	26	25	62	63	69	22	23	22	9	8	8	5	7	8	5	7	7	210	237	239
Haringey	6	5	4	33	28	26	66	72	78	25	24	23	9	8	6	6	8	7	7	9	8	222	244	232
Harrow	4	3	2	27	28	26	57	60	74	23	24	26	7	7	2	6	7	5	6	5	5	177	203	224
Hillingdon	5	4	1	21	22	15	49	57	68	19	21	15	7	7	5	6	4	6	6	5	2	154	186	200
Hounslow	5	4	3	25	23	26	54	60	63	19	22	23	8	7	10	6	6	4	4	5	6	179	217	218
Richmond	6	4	3	26	29	27	60	67	68	25	32	23	9	11	9	7	8	7	5	8	6	235	261	247
South West																								
Croydon	7	5	1	26	25	25	56	69	60	23	26	23	10	7	7	7	6	10	6	7	5	224	226	225
Kingston	6	5	1	24	17	18	55	65	70	24	26	20	6	8	8	8	10	8	8	5	5	206	243	222
Merton	5	4	7	30	28	22	60	71	68	27	25	27	9	7	12	6	7	5	6	8	11	224	272	261
Sutton	5	3	5	29	22	28	55	63	71	25	26	27	8	8	9	7	7	9	7	6	8	183	225	227
NORTH EAST																								
Barking	6	7	5	35	28	31	65	77	80	18	22	21	7	7	5	6	7	7	7	8	9	147	192	221
Enfield	5	4	3	28	29	27	59	68	71	25	19	24	8	6	10	6	9	8	8	8	10	198	234	265
Havering	5	5	4	19	19	19	42	49	61	17	17	18	7	6	5	5	4	8	6	6	7	133	164	178
Newham	6	6	4	35	38	38	66	77	76	20	21	26	7	9	7	6	6	6	7	8	13	176	214	219
Redbridge	6	6	6	28	30	30	55	54	59	24	27	25	9	8	8	5	6	6	6	8	6	197	223	225
Wal. Forest	6	7	5	34	31	35	61	72	77	26	25	30	7	7	8	9	6	9	7	10	7	190	230	225
SOUTH EAST																								
Bexley	6	5	3	26	25	17	52	58	53	19	23	19	7	8	10	7	5	6	6	6	7	182	208	215
Bromley	4	5	5	27	25	20	54	60	63	22	23	23	9	7	5	7	7	9	5	6	9	195	215	207

London Boroughs, 1959 to 1965

Hypertension with heart disease			Influenza			Pneumonia			Bronchitis			Ulcer of stomach and duodenum			Nephritis and nephrosis			Congenital malformations			Motor vehicle accidents			Suicide		
19			22			23			24			26			28			31			33			35		
1959–61	1962–64	1965	1959–61	1962–64	1965	1959–61	1962–64	1965	1959–61	1962–64	1965	1959–61	1962–64	1965	1959–61	1962–64	1965	1959–61	1962–64	1965	1959–61	1962–64	1965	1959–61	1962–64	1965
19	12	10	8	2	–	74	84	62	70	60	54	14	9	9	6	6	6	11	14	15	11	9	9	23	24	24
27	21	25	4	2	1	81	84	79	67	79	72	12	12	9	4	7	6	9	8	12	13	17	15	9	13	14
21	16	11	7	2	1	67	71	75	106	106	74	13	11	10	9	6	4	11	13	11	9	11	13	14	14	13
18	14	12	8	3	2	56	78	65	89	89	78	12	11	11	4	5	7	17	13	10	14	12	17	14	18	17
22	15	7	9	2	0	77	88	108	104	88	71	12	14	7	6	6	5	12	12	9	14	11	11	14	15	16
15	13	9	12	6	2	67	72	68	55	63	54	11	7	5	6	4	6	13	12	11	13	11	11	22	28	30
19	17	11	10	5	1	81	91	78	77	91	62	14	9	8	7	7	6	11	12	14	14	14	14	15	19	15
22	20	18	8	2	1	73	78	103	80	89	86	13	10	10	7	7	5	11	12	10	12	13	12	13	14	12
23	19	14	9	2	1	86	97	120	98	98	69	15	12	14	9	8	5	14	14	16	16	9	13	14	16	17
27	18	14	14	5	–	85	101	83	118	119	106	16	10	11	9	7	8	14	13	15	13	12	16	14	15	9
18	17	11	12	6	2	86	92	93	79	85	73	12	10	10	8	8	9	13	10	11	14	14	11	15	17	18
29	21	7	9	4	2	62	63	58	79	70	51	15	10	10	6	6	7	12	10	10	11	10	10	25	32	31
32	25	16	11	3	1	66	74	82	50	51	44	10	11	8	5	6	5	8	10	6	11	13	14	13	14	12
23	16	9	9	3	0	42	66	58	60	69	56	11	10	7	5	5	4	9	11	10	12	11	14	11	14	13
25	22	19	9	3	1	68	95	88	67	71	66	12	9	10	5	4	6	9	10	10	14	13	12	14	13	12
26	15	14	8	2	1	71	94	73	74	77	62	12	11	10	7	7	6	10	13	11	11	14	12	15	15	9
23	19	11	7	2	2	46	49	56	50	52	45	9	10	8	6	8	3	7	9	7	11	10	12	10	12	8
16	15	14	6	2	2	45	61	64	44	47	36	9	9	8	2	4	4	11	11	8	14	11	17	10	10	9
24	23	15	10	3	2	56	63	62	57	66	55	9	9	6	4	5	3	9	9	8	15	12	13	11	12	12
24	20	24	16	8	4	71	74	71	59	66	59	12	10	13	6	6	2	7	8	12	14	14	14	14	17	18
26	21	14	11	5	1	84	98	118	59	73	60	10	10	10	8	6	7	8	8	9	12	13	13	12	17	12
20	21	25	11	6	1	57	65	59	53	54	38	6	7	6	5	5	3	9	8	8	16	14	14	14	17	16
19	16	15	9	5	1	62	68	65	61	73	65	10	10	7	6	7	3	9	10	6	12	13	8	13	14	11
19	17	7	10	3	–	53	72	56	57	67	52	8	11	7	5	7	2	7	8	10	11	11	14	13	14	8
16	18	12	5	3	1	40	52	46	61	70	74	8	8	12	8	6	10	9	10	6	9	13	14	7	12	6
28	17	17	7	4	1	54	67	49	59	67	57	11	9	10	5	6	4	7	10	10	13	12	10	10	10	13
14	20	12	4	3	5	36	47	45	51	61	50	6	5	3	7	6	5	8	9	8	13	12	12	8	7	5
21	19	13	11	3	2	62	75	84	74	74	79	12	9	8	8	6	7	10	12	12	11	13	16	10	11	14
33	21	18	11	4	4	71	94	100	64	65	63	11	8	8	6	6	4	10	8	9	12	13	10	16	12	10
27	18	15	9	6	1	78	95	94	67	76	58	14	11	9	6	6	7	9	9	10	11	10	13	9	11	12
27	23	16	7	2	1	46	65	71	48	54	53	9	9	8	6	5	7	8	10	13	11	11	12	9	7	8
23	16	14	6	4	1	67	74	97	49	57	42	10	10	7	4	5	4	8	10	9	13	12	14	11	10	15

Diagram 9
GREATER LONDON
SHOWING
CITY OF LONDON
AND
LONDON BOROUGHS
HERTS.
BUCKS.
ENFIELD
BARNET
HARROW
HARINGEY
WALTHAM FOREST
REDBRIDGE
HAVERING
HILLINGDON
BRENT
CAMDEN
2
3
NEWHAM
BARKING
EALING
TOWER HAMLETS
1
4
5
6
SOUTHWARK
GREENWICH
HOUNSLOW
LAMBETH
BEXLEY
WANDSWORTH
RICHMOND UPON THAMES
LEWISHAM
KINGSTON UPONTHAMES
MERTON
SUTTON
CROYDON
BROMLEY
KENT
SURREY
1 CITY OF LONDON
2 ISLINGTON
3 HACKNEY
4 CITY OF WESTMINSTER
5 HAMMERSMITH
6 KENSINGTON & CHELSEA

MATERNAL, FOETAL AND INFANT MORTALITY

Maternal mortality

The table analysing deaths from maternal causes, including abortions and deaths from associated causes, is now published in the *Registrar General's Statistical Review* of Part I for 1965 as Appendix Table F1 on page 419.

The number of maternal deaths and of associated deaths in 1965 was the lowest on record and the spectacular reduction in number over the past thirty years can be illustrated by comparing 1965 with 1935.

	1965	1935
Maternal deaths othan than abortion	169	2,126
Deaths from abortion (all forms)	52	464
Associated maternal deaths	48	712

The maternal mortality per 100,000 total births for 1965 is (to the nearest integer) the same as in the previous year, but apart from abortions the rates are less than half the rates ten years ago, and less than two thirds the rates five years ago. The only individual causes for which this declining mortality does not hold are (neglecting rates per 100,000 total births of one or less):

Trauma, shock and other complications of delivery	23 deaths in 1955 23 deaths in 1965
Other causes of maternal death	57 deaths in 1955 40 deaths in 1965
Abortion (all forms)	66 deaths in 1955 52 deaths in 1965

The apparent stagnation in the first two of these categories may possibly be a statistical fallacy. Changing diagnostic terms may lead to more deaths being coded to "other causes" instead of to the older, particularized categories. These two categories represented 23.6 per cent of maternal deaths other than abortion *(sensu strictu)* in 1955, but 37.3 per cent in 1965.

For fuller details of maternal mortality reference can be made to "Report on confidential Enquiry into Maternal Deaths in England and Wales" which is published triennially by the Ministry of Health.

Table C61. Maternal mortality distinguishing principal causes, and including associated deaths; rates per 100,000 total births, 1931 to 1965, England and Wales

	MATERNAL MORTALITY (complications of pregnancy, childbirth and puerperium, including abortion) (ICD Nos. 640–689)														ASSOCIATED MATERNAL MORTALITY			Total mortality attributed to, or associated with, maternal causes
										Abortion								
										Criminal		Other						
	Puerperal phlebitis thrombosis and embolism	Sepsis	Antepartum haemorrhage	Postpartum haemorrhage	Toxaemia	Prolonged labour	Trauma, shock: other complication of delivery	Other causes	Total maternal causes other than abortion	with sepsis	without mention of sepsis	with sepsis	without mention of sepsis	Abortion (all forms)	**Total maternal mortality**	Other than abortion	with abortion	Total	
ICD No.	682, 684	681	643, 644, 670	671, 672	642, 685, 686	673–675	676–678	Rem. 640–8 660–689	640–8 660–689	651.2	650.2 652.2	Rem. 651	Rem. 650, 652	650–652	**640–689**				
1931–35	32.6	110	49.8		80.6	82.4			356	9.0	4.5	41.4	20.6	75.5	**431**	111	12.8	124	**555**
1936–40	25.3	51.5	47.5		74.9	70.9			270	8.9	4.4	27.6	14.9	55.8	**326**	75.0	11.4	86.4	**412**
1941–45	17.1	17.7	12.3	27.0	52.6	23.2	13.6	16.6	180	10.0	1.9	22.1	9.5	43.6	**224**	54.6	6.5	61.0	**285**
1946–50	9.9	4.4	6.7	14.0	32.6	10.1	7.9	8.8	94.5	3.9	1.0	6.9	4.3	16.1	**111**	29.6	3.4	33.0	**144**
1951–55	7.4	2.1	4.3	6.6	17.4	4.7	5.1	7.8	55.5	2.8	3.4	3.6	2.2	12.0	**67.6**	18.8	1.0	19.8	**87.4**
1956–60	4.3	1.8	3.5	3.2	9.4	3.3	3.2	6.5	35.2	1.8	1.9	2.7	1.7	8.1	**43.3**	12.7	0.74	13.4	**56.7**
1961–65	2.7	0.95	1.9	2.0	5.5	1.6	2.8	5.8	23.2	1.3	1.5	2.2	1.1	6.1	**29.3**	6.9	*0.42*	7.4	**36.6**

Table C62. Maternal deaths attributed to or associated with abortion, 1931 to 1965, England and Wales

	Spontaneous or induced for therapeutic reasons		Induced for non-therapeutic reasons		Per cent of deaths due to abortion which had mention of sepsis	Total attributed to abortion (including criminal)	Others associated with abortion	Total attributed to, or associated with, abortion
	with sepsis	without sepsis	with sepsis	without sepsis				
1931-35	1,305	649	285	142	67	**2,381**	402	**2,783**
1936-40	874	470	282	139	65	**1,765**	360	**2,125**
1941-45	763	329	346	67	74	**1,505**	224	**1,729**
1946-50	275	172	157	42	67	**646**	137	**783**
1951-55	125	76	96	118	53	**415**	36	**451**
1956-60	102	64	68	71	56	**305**	28	**333**
1961-65	95	49	55	63	57	**262**	18	**280**

Associated mortality

Deaths associated with abortion, and complications of pregnancy and the puerperium have been tabulated in Part III of the *Statistical Review* in the past. The table has now been transferred to Part I of the *Review* for 1965 as Appendix Table F2. The material has been summarised in Table C63 for the past five years, and reveals a decrease in the total number of deaths overall, but not for abortions. This decrease is unexpected, because the number of births has not changed to that extent, nor has the death rate in the ordinary female population declined so much. It is suggestive of a transfer of diagnosis from non-maternal associated causes to causes directly related to pregnancy.

The presence of this tendency to transfer diagnosis to complications of pregnancy is again suggested when the equivalent death rates based on the associated deaths are compared with rates for the general population at the same age. This has been done for the two years 1964 and 1965:

Age	Number of maternities		Number of associated deaths		Rate per thousand maternities		Annual death rate per thousand population (females)	
	1964	1965	1964	1965	1964	1965	1964	1965
15-	77,226	82,090	1	4	0.01	0.05	0.40	0.40
20-	277,168	279,999	9	3	0.03	0.01	0.46	0.45
25-	271,497	264,001	15	12	0.06	0.05	0.58	0.59
30-	153,949	145,022	16	8	0.10	0.06	0.78	0.81
35-	76,037	72,626	9	15	0.12	0.21	1.3	1.3
40-	22,815	21,349	4	5	0.18	0.23	2.2	2.2
45 and over	1,289	1,432	1	1	0.78	0.70	4.4	4.4

Table C63. Deaths associated with abortion, pregnancy or childbearing, 1961 to 1965, England and Wales

Cause of death	1961-1965	1961	1962	1963	1964	1965
Tuberculosis	5	1	1	1	1	1
Other infectious disease	6	1	2	1	1	1
Malignant neoplasms	33	4	7	9	4	9
Benign neoplasms	15	1	4	3	5	2
General diseases (ICD Nos. 240-299)	24	3	10	3	4	4
Vascular lesions affecting central nervous system	11	3	3	2	2	1
Other diseases of central nervous system and ear	8	2	1	2	2	1
Mitral stenosis and rheumatic heart disease	61	19	16	17	5	4
Other heart disease and hypertension	27	5	4	6	7	5
Diseases of arteries, veins and lymphatic system	6	-	2	2	2	-
Pneumonia	20	5	4	5	5	1
Other respiratory disease	21	11	4	-	3	3
Peptic ulcer	4	2	-	1	-	1
Appendicitis	7	1	2	2	1	1
Other diseases of digestive system	16	3	2	3	4	4
Congenital malformations	15	1	6	4	2	2
Other diseases	10	1	6	-	1	2
Accidents, poisonings, and violence	29	8	3	6	6	6
Total deaths	**318**	**71**	**77**	**67**	**55**	**48**
By age: 15-	15	1	6	3	1	4
20-	51	13	15	11	9	3
25-	82	20	19	16	15	12
30-	71	13	20	14	16	8
35-	63	12	11	16	9	15
40-	34	12	6	7	4	5
45 and over	2	-	-	-	1	1
Associated with abortion (included above)	**18**	**3**	**2**	**6**	**1**	**6**
By age: 15-	3	-	-	2	-	1
20-	2	-	1	1	-	-
25-	2	-	-	1	-	1
30-	4	1	-	1	1	1
35-	5	2	1	1	-	1
40-	2	-	-	-	-	2
45 and over	-	-	-	-	-	-

Source: *Statistical Review* for 1965, Part I, Appendix Table F2, page 420. Previous years, *Statistical Reviews*, Part III.

The maternity cases have not been exposed for a full year (nine months only), and women aborting would have only a short exposure to risk (averaging possibly 3-4 months); in addition these women would be a select population, in the sense that ill persons would be less likely to embark upon pregnancy. Whether these factors are sufficient to explain the discrepancy is a matter for conjecture.

Stillbirths

Causes of stillbirths and loss of infant life

During the past five years the stillbirth rate has decreased from 19.0 to less than 16 per thousand total births and the mortality in the first year of life has decreased from 21.4 to only 19.0 per thousand live births. It is only since 1961 (the first whole year of registration) that the causes of stillbirth have been known in the same detail as the causes of infant death, and the present analysis, based on data published in Part I of the *Registrar General's Statistical Review* (Tables 23A-I and 27), is confined to the years 1961-1965. The International Classification of Diseases code for deaths differs in some details from that for stillbirths, but the major causes which are comparable have been tabulated for comparison in Table C66.

The actual numbers of births and deaths in specified age-groups is shown below.

Table C64. Births and infant deaths by specified age-groups, 1961 to 1965, England and Wales

Year	Births registered			Infant deaths registered					Survivors at 1 year
	Total	Still	Live	First day	Rest of week	Rest of month	Rest of year	Total under 1 year	
1961	827,008	15,727	811,281	6,177	4,591	1,675	4,950	17,393	793,888
1962	854,200	15,464	838,736	6,212	4,676	1,768	5,531	18,187	820,549
1963	869,044	14,989	854,055	6,170	4,328	1,675	5,869	18,042	836,013
1964	890,518	14,546	875,972	6,230	4,307	1,569	5,339	17,445	858,527
1965	876,566	13,841	862,725	5,667	4,065	1,468	5,195	16,395	846,330

The total number of births (live and still) has increased by 6.0 per cent since 1961, but the number of children surviving to the age of twelve months has increased by 6.6 per cent. The greatest improvement compared to 1961 has been in the number of stillbirths (-12.0 per cent) and deaths during the first month of life (-10.0 per cent); deaths on the first day of life have not been reduced so much (only -8.3 per cent), whilst deaths after the first month of life have increased by 4.9 per cent.

The relative improvement can also be seen from the conventional rates used to measure stillbirths and infant mortality, although for precise comparison slight amendments would be necessary.

Table C65. Stillbirths per thousand total births, and infant deaths per thousand live births by specified age-groups, 1961 to 1965, England and Wales

Year	Still birth rate	Infant death rate				
		First day	Rest of first week	Rest of first month	Rest of first year	Total under 1 year
1961	19.0	7.61	5.66	2.06	6.10	21.4
1962	18.1	7.41	5.58	2.11	6.59	21.7
1963	17.2	7.22	5.07	1.96	6.87	21.1
1964	16.3	7.11	4.92	1.79	6.10	19.9
1965	15.8	6.57	4.71	1.70	6.02	19.0

Birth injury (including difficult labour) has shown the most spectacular decline in toll of life, 786 infant lives having been saved in 1965 compared with 1961. The improvement has been greatest for stillbirths, a drop of 33 per cent in four years, and has been much more modest in the period after birth. This may be the result of preventive steps, such as better selection of cases for Caesarian section in place of natural delivery. There has been a slight increase in the number of Caesarian sections, the percentage so delivered in NHS hospitals having been:

1960	1961	1962	1963
4.5	4.5	4.8	4.7

Source: Reports of Hospital In-Patient Enquiry.

By contrast, asphyxia and atelectasis is more frequent as a cause of stillbirth, although the number have improved slightly for infants. Possibly the factors leading to death from these rather ill-defined causes cannot be foreseen so clearly before delivery.

Congenital malformations account for about 20 per cent of both stillbirths and infant deaths, and improvement has occurred at all stages, except on the first day of life. More deaths were attributed to all major forms of congenital malformations on the first day of life, and this could be the result of greater interest in the diagnosis of malformations. Spina bifida and meningocele caused fewer stillbirths (a decrease of more than one quarter in four years) but infant deaths fluctuated erratically. The other major group of malformations - monsters, including anencephalus - has produced slightly more infant deaths, the majority occuring on the first day of life, but fewer stillbirths from this cause.

Erythroblastosis is a smaller group which has shown a slight decrease in the number of stillbirths, and in the number of infant deaths on the first day of life, but little change later in infancy.

Our hopes of reducing mortality in early life depend upon increasing knowledge of the causes of such mortality. The use of ill-defined terms is a useful indicator of unexplained mortality, and one such term - asphyxia - has already been mentioned in association with birth injury. Another unsatisfying term is immaturity (unqualified) and here there has been a steady reduction in the number coded to this term, both for stillbirths and also for infant deaths, even though there has been an increase in the stated proportion of stillbirths which were, in fact, either immature or premature.

	Per cent of all stillbirths		
	Under 2.5 kg birth weight	Under 36 weeks gestation	Immaturity* (Y 39.53)
1961	45.3	33.0	1.49
1962	46.2	32.7	1.44
1963	48.5	35.0	1.35
1964	46.6	35.8	1.38
1965	49.3	35.5	1.33

* Referred to as prematurity in Part I of the *Statistical Review* Tables

The relatively static position with regard to infant mortality after the first month of life is probably due to several causes. Respiratory infections, which form the greater bulk of these cases, are tending to become resistant to antibiotics and virus infections are for the most part insensitive to chemotherapy. This is a field in which the greatest advances have been made in the past years, and so any marked improvement on the present standard will depend on new methods of attack being evolved.

Respiratory infections tend to be more prevalent in winter months, especially in a hard winter such as in early 1963, when measles was also prevalent. Gastro-intestinal infections are becoming a greater problem in the general population, and infant infections are probably governed largely by the incidence in older members of the family.

Table C66. Comparison of causes of perinatal and later infant mortality, 1961 to 1965, England and Wales

ICD No.*	Cause of death	Year	Total stillbirths and infant deaths	Stillbirths	Infant deaths					
					Total under 1 year	Day		Week	Month	
						0	1-6	1-3	1-2	3-11
	All causes	**1961**	**33,120**	**15,727**	**17,393**	**6,177**	**4,591**	**1,675**	**1,947**	**3,003**
		1962	**33,651**	**15,464**	**18,187**	**6,212**	**4,676**	**1,768**	**2,127**	**3,404**
		1963	**33,031**	**14,989**	**18,042**	**6,170**	**4,328**	**1,675**	**2,293**	**3,576**
		1964	**31,991**	**14,546**	**17,445**	**6,230**	**4,307**	**1,569**	**2,135**	**3,204**
		1965	**30,236**	**13,841**	**16,395**	**5,667**	**4,065**	**1,468**	**2,048**	**3,147**
490-493, 763	Pneumonia	1961	2,310	-	2,310	68	342	294	618	988
		1962	2,605	-	2,605	77	331	355	704	1,138
		1963	2,862	-	2,862	79	272	328	851	1,332
		1964	2,375	-	2,375	64	232	287	728	1,064
		1965	2,372	-	2,372	59	242	262	685	1,124
500-502	Bronchitis	1961	319	-	319	1	4	18	102	194
		1962	412	-	412	1	6	29	118	258
		1963	459	-	459	-	1	18	138	302
		1964	365	-	365	1	5	20	106	233
		1965	345	-	345	-	3	6	118	218
571, 764	Gastro-enteritis	1961	387	-	387	-	7	56	113	211
		1962	450	-	450	-	6	49	135	260
		1963	397	-	397	-	3	61	113	220
		1964	420	-	420	-	6	49	116	249
		1965	341	-	341	-	4	44	94	199
750-759 (Y38)	Congenital malformations	1961	6,681	3,077	3,604	695	831	758	631	689
		1962	6,695	2,857	3,838	761	913	808	639	717
		1963	6,351	2,768	3,583	748	828	750	601	656
		1964	6,326	2,691	3,635	856	858	699	593	629
		1965	5,912	2,551	3,361	748	780	699	567	567
750 (Y38.6)	Monsters, including anencephalus	1961	1,875	1,691	184	147	33	2	2	-
		1962	1,772	1,568	204	152	45	5	1	1
		1963	1,761	1,569	192	144	42	4	1	1
		1964	1,779	1,561	218	176	37	4	1	-
		1965	1,673	1,467	206	155	48	3	-	-

751 (Y38.2)	Spina bifida and meningocele	1961	1,014	401	613	62	97	211	129	114
		1962	883	311	572	67	108	183	125	89
		1963	1,031	320	711	115	123	219	139	115
		1964	926	300	626	110	125	159	137	95
		1965	875	290	585	97	116	165	106	101
754 (Y38.4)	Heart and circulatory system	1961	1,480	52	1,428	125	381	287	285	350
		1962	1,636	62	1,574	136	458	315	284	381
		1963	1,625	59	1,566	135	420	312	327	372
		1964	1,646	63	1,583	140	434	333	311	365
		1965	1,567	60	1,507	124	398	339	310	336
760,761 (Y34, Y37)	Birth injury	1961	3,737	1,694	2,043	1,106	855	80	2	-
		1962	3,426	1,564	1,862	1,023	754	85	-	-
		1963	3,329	1,386	1,943	1,108	746	88	1	-
		1964	3,224	1,284	1,940	1,107	747	83	3	-
		1965	2,951	1,138	1,813	1,032	719	60	1	1
762 (Y39.50, Y39.51)	Asphyxia and atelectasis	1961	3,067	420	2,647	1,591	964	62	15	15
		1962	3,182	509	2,673	1,600	991	58	13	11
		1963	3,030	517	2,513	1,467	967	53	16	10
		1964	3,148	509	2,639	1,542	1,007	60	20	10
		1965	2,851	518	2,333	1,352	912	44	12	13
770 (Y39.2)	Erythroblastosis	1961	1,082	748	334	221	95	10	5	3
		1962	1,024	671	353	226	110	12	4	1
		1963	1,005	663	342	227	90	21	1	3
		1964	1,050	733	317	202	97	14	2	2
		1965	963	651	312	207	98	5	1	1
773 (Y39.4, Y39.54, Y39.6)	Ill-defined diseases	1961	2,365	1,912	453	189	228	25	10	1
		1962	2,396	1,928	468	233	207	18	7	3
		1963	2,285	1,768	517	247	237	18	11	4
		1964	2,289	1,794	495	236	227	19	11	2
		1965	2,144	1,652	492	232	221	23	10	6
776 (Y39.53)	Immaturity	1961	3,129	235	2,894	1,935	856	92	11	-
		1962	3,080	222	2,858	1,872	906	70	9	1
		1963	2,939	202	2,737	1,860	788	82	7	-
		1964	2,761	201	2,560	1,760	726	62	12	-
		1965	2,635	184	2,451	1,655	717	72	6	1
E800-E999	Accidents, poisonings, and violence	1961	494	-	494	56	14	34	121	269
		1962	578	-	578	53	17	33	160	315
		1963	605	-	605	77	13	32	161	322
		1964	671	-	671	60	6	37	189	379
		1965	708	-	708	71	13	37	203	379

* Categories of cause of stillbirth are shown in brackets.

Stillbirth rate and place of confinement

The place of confinement chosen for the expectant mother is dependent on the number of children she has borne in the past, and selection for delivery in hospital is more likely if there are any reasons to foresee difficulties in delivery. Stillbirth rates are lowest in deliveries taking place in the patient's own home as the result of this deliberate selection.

Table C67. Stillbirth rates per thousand total births by parity of mother and place of confinement, 1965, England and Wales

Parity of mother	Place of confinement				All places
	NHS hospital	Other hospital	Own home	Other places	
0	18.1	11.1	7.3	8.5	16.7
1	16.5	5.6	3.8	5.8	11.4
2	23.2	5.2	4.2	6.4	14.6
3	27.8	7.8	5.9	20.5	18.4
4	28.9	14.7	9.5	9.5	22.7
5-9	29.7	9.8	14.8	39.0	26.4
10-14	46.6	-	31.3	-	44.2
15 and over	64.5	-	-	-	57.1
Illegitimate	19.0	8.1	17.8	35.5	19.0
England and Wales	**19.9**	**8.2**	**5.7**	**12.2**	**15.8**

Differences between regions in stillbirth rates may be due in part to differences in the choice of the place of delivery. Results of delivery at home vary considerably, the stillbirth rate being only 3.2 in the Oxford Hospital Board Region and over 10 in Wales; the rates in NHS hospitals do not show so great a range.

Table C68. Stillbirth rates per thousand total births in hospital board regions by place of confinement, 1965, England and Wales

Hospital Board Region	Place of confinement				All places
	NHS hospital	Other hospital	Own home	Other places	
Newcastle	22.3	11.9	7.2	9.6	18.0
Leeds	20.2	5.7	5.9	10.4	16.3
Sheffield	21.7	6.7	5.9	7.5	15.8
East Anglian	19.3	10.0	5.0	11.3	13.2
North West Metropolitan	16.9	8.7	3.9	29.1	13.8
North East Metropolitan	19.3	9.0	3.8	18.2	14.6
South East Metropolitan	18.2	8.6	5.2	13.7	14.4
South West Metropolitan	15.5	9.4	4.3	18.0	13.1
Wessex	18.8	4.1	4.0	5.1	13.6
Oxford	16.2	10.0	3.2	11.1	12.7
South Western	19.3	6.8	5.8	8.7	15.6
Welsh	20.9	10.3	10.3	12.6	18.6
Birmingham	22.8	7.6	6.9	11.8	17.5
Manchester	22.8	6.3	6.0	15.4	18.1
Liverpool	21.4	9.1	7.0	16.1	17.9
England and Wales	**19.9**	**8.2**	**5.7**	**12.2**	**15.8**

Regional differences in causes of stillbirth

The completion of the first five years registration of causes of stillbirth in 1965 is a convenient occasion to review those aspects for which a single year's figures are inadequate. The records for the five years have been pooled and the

rates averaged, for some of the major causes of stillbirth to provide a firmer basis for the regional comparisons. The rates are per thousand total births, so that one unit in the rate represents on the average about 120 times that number of cases in Wales to 1,500 times that number of cases in the South East Region.

Wales has a stillbirth rate more than thirty per cent higher than East Anglia and South East of England; and the rate in the North Region is more than twenty five per cent higher. This pattern is repeated in many of the causes of stillbirth.

The greatest difference between regions is found for some congenital malformations -

All hydrocephalus	Wales	1.11	South East	0.58
	North	0.98	East Anglia	0.65
	North West	1.06		
All spina bifida	Wales	1.01	South East	0.38
	North West	0.87	East Anglia	0.46
	North	0.67		
Anencephalus	Wales	2.65	East Anglia	1.36
	North West	2.37	South East	1.33
	North	2.24		

This contrast of North and West with South and East is also found to a variable degree in other causes of stillbirth.

Haemorrhage plus premature separation of placenta	North West	2.56	South East	1.67
	North	2.33	East Anglia	1.60
Toxaemia	Wales	2.79	Yorkshire and Humberside	2.11
	North	2.65	South East	2.03
			North West	2.19

The above mentioned conditions are largely due to unknown factors - possibly social or ethnographic - for which there seems little immediate prospect of amelioration. Other conditions for which improvements have been made and could be expected to occur include -

Difficulties in labour	Wales	1.61	South East	1.04
	North	1.47	North West	1.19
Malposition (included in Difficulties in labour)	Wales	0.87	South East	0.51
	North	0.84	North West	0.56
Erythroblastosis	North	1.02	South East	0.67
	North West	0.99	South West	0.68

There are one or two groups of moderate size where this pattern is not found. Birth injury is recorded most frequently in the Midlands and least often in Wales -

Birth injury	West Midland	0.50	Wales	0.25
	East Midland	0.47		
	Yorkshire and Humberside	0.45		
Post-maturity	South West	0.15	East Anglia	0.09
	Yorkshire and Humberside	0.14		

but these groups are small numerically and the apparent difference may be an indirect result of larger values recorded for other diagnoses.

The distribution of births by parity is known to be dissimilar in different parts of the country, as the result, both of different sizes of family in different regions and the migration of young married couples. Account of this needs to be taken, and data in Table C70 will assist in this task. This Table (C70) analyses stillbirths by hospital region, and a stillbirth rate standardized for parity and illegitimate births has been calculated. This indicates that the best foetal survival is achieved in Oxford, Wessex and the South West Metropolitan Regions.

Congenital malformations

A surveillance system of notification of congenital malformations introduced from January 1964 has enlarged considerably the amount of information available about the variations from place to place and from time to time in these malformations.

Table C72 summarizes the notifications for the four quarters of each of the two years 1964 and 1965, expressed as rates per 100,000 total births (live and still). With about 800,000 births per year, this implies that each quarter is based on roughly 200,000 births, so that each rate represents approximately double that number of malformations.

The rate for all forms of malformation was:

1964 2,004 per 100,000 total births

1965 1,891 per 100,000 total births

the decline possibly indicating adjustments in definition and a settling down after the inauguration of the scheme of notification. The quarterly rates were:

	March	June	September	December
1964	2,288	2,059	1,794	1,861
1965	1,967	1,836	1,848	1,916

Table C69. Stillbirth rates per 1,000 total births for selected causes, in standard regions, 1961 - 1965, England and Wales

ICD No.	Cause of Stillbirth	England and Wales	North	Yorkshire and Humberside	North West	East Midland	West Midland	East Anglia	South East*	South West	Wales
Y30-Y39	**All causes**	**17.3**	**19.5**	**18.0**	**19.3**	**17.6**	**18.5**	**15.3**	**15.3**	**16.6**	**20.1**
Y30, Y31	Disease in mother	0.60	0.58	0.59	0.61	0.57	0.67	0.51	0.56	0.63	0.69
Y32	Conditions of pregnancy and childbirth	2.89	3.29	2.68	2.87	3.05	3.28	2.71	2.60	3.01	3.46
Y32.2	Haemorrhage without mention of placental condition	0.55	0.62	0.52	0.64	0.69	0.64	0.43	0.44	0.49	0.60
Y32.3,.4	Toxaemia of pregnancy	2.29	2.65	2.12	2.19	2.33	2.59	2.23	2.03	2.45	2.80
Y34	Difficulties in labour	1.24	1.47	1.34	1.19	1.33	1.37	1.21	1.05	1.26	1.62
Y34.2	Difficult labour with malposition of foetus	0.63	0.83	0.64	0.56	0.68	0.65	0.57	0.51	0.74	0.87
Y36	Placental and cord conditions	4.96	5.81	5.23	5.58	4.83	5.19	4.24	4.35	4.79	5.61
Y36.0	Cord condition without mention of placental abnormality	1.37	1.51	1.36	1.44	1.35	1.49	1.47	1.27	1.39	1.41
Y36.1	Placenta praevia	0.22	0.24	0.22	0.18	0.20	0.22	0.18	0.17	0.16	0.26
Y36.2	Premature separation of normally implanted placenta	1.44	1.72	1.66	1.94	1.52	1.36	1.12	1.33	1.22	1.50
Y37	Birth injury	0.40	0.35	0.46	0.38	0.47	0.50	0.44	0.37	0.44	0.25
Y37.3	Birth injury with malposition of foetus	0.10	0.08	0.13	0.09	0.15	0.12	0.11	0.09	0.15	0.07
Y38	Congenital malformation of foetus	3.24	3.87	3.39	4.09	3.42	3.44	2.66	2.67	3.10	4.45
Y38.0	Anencephalus	1.80	2.23	1.82	2.37	1.94	1.93	1.35	1.45	1.66	2.65
Y38.1	Hydrocephalus	0.56	0.74	0.62	0.69	0.60	0.61	0.47	0.46	0.51	0.63
Y38.2	Spina bifida	0.38	0.40	0.44	0.50	0.37	0.42	0.28	0.28	0.40	0.66
Y38.20	Spina bifida with mention of hydrocephalus	0.27	0.28	0.30	0.37	0.28	0.29	0.19	0.19	0.27	0.48
Y38.4	Malformation of the cardiovascular system	0.07	0.04	0.10	0.08	0.04	0.06	0.12	0.06	0.09	0.04
Y38.6	Monster	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.01	0.01
Y39	Diseases of foetus and ill-defined causes	3.91	4.06	4.24	4.55	3.91	3.97	3.50	3.29	3.34	3.97
Y39.2	Erythroblastosis	0.80	1.02	0.88	0.99	0.83	0.76	0.86	0.67	0.67	0.71
Y39.4	Maceration, cause not specified	1.10	1.22	1.14	1.27	1.10	1.33	0.86	0.96	0.93	1.17
Y39.50	Asphyxia	0.45	0.34	0.49	0.60	0.38	0.36	0.41	0.45	0.30	0.52
Y39.52	Post-maturity	0.11	0.13	0.14	0.10	0.10	0.13	0.09	0.21	0.15	0.11
Y39.53	Prematurity	0.24	0.28	0.36	0.27	0.23	0.26	0.20	0.19	0.20	0.30
Y39.6	Cause unspecified	0.85	0.72	0.91	0.96	0.85	0.73	0.82	0.91	0.74	0.82

* Rates for years prior to 1965 are an average of those for Southern Region and London and South East, weighted in proportion to the number of births.

Note: Rates for 1965 are based on areas with slightly different boundaries than those of earlier years.
Number of stillbirth upon which these rates are based are found in Table 23 D of Part I of the *Statistical Review.*

Table C70. Stillbirth rates per 1,000 total births, by parity and hospital region of confinement, 1965, England and Wales

Hospital region	Legitimate stillbirth rate						Illegitimate stillbirth rate	Crude stillbirth rate	Standardised stillbirth rate*
	Number of previous liveborn children								
	0	1	2	3	4	5–9			
England and Wales	**16.7**	**11.4**	**14.6**	**18.4**	**22.7**	**26.4**	**19.0**	**15.8**	**15.7**
Newcastle	18.8	14.6	16.9	18.1	26.5	27.0	18.6	18.0	17.8
Leeds	16.7	11.0	15.6	20.9	23.1	28.3	19.7	16.3	16.1
Sheffield	16.1	12.5	14.5	18.2	22.0	27.3	18.6	15.8	15.8
East Anglian	14.6	8.9	11.7	19.9	22.5	17.1	16.0	13.2	13.4
North West Metropolitan	14.9	10.7	12.1	13.5	21.4	20.2	18.5	13.8	13.9
North East Metropolitan	16.7	9.8	14.0	19.4	18.4	26.4	15.6	14.6	14.8
South East Metropolitan	15.9	10.6	14.7	15.4	23.2	19.1	15.7	14.4	14.5
South West Metropolitan	13.8	8.8	12.1	14.5	16.9	24.8	18.7	13.1	13.0
Wessex	15.6	10.3	10.9	12.8	14.9	29.4	16.1	13.6	13.7
Oxford	14.5	8.7	12.6	11.1	16.1	21.8	15.4	12.7	12.7
South Western	17.2	11.0	14.0	20.8	20.4	30.2	15.8	15.6	15.7
Welsh	20.7	12.3	16.5	22.0	23.7	34.6	24.2	18.6	18.6
Birmingham	17.4	13.0	16.3	22.2	28.4	25.2	20.3	17.5	17.2
Manchester	18.4	12.6	16.4	19.9	26.9	29.6	25.3	18.1	17.8
Liverpool	18.9	13.2	16.2	21.1	20.5	26.2	22.2	17.9	17.6
Total births in England and Wales	*292,016*	*250,804*	*136,303*	*65,073*	*30,945*	*32,433*	*67,533*	*876,566*	

* Standardised for parity and illegitimacy.

per 100,000 total births, indicating the persistence of higher notification in the first quarter even in 1965, but to a more moderate degree.

Greater reliance can therefore be placed on the 1965 notifications, and the main groups of malformations for that year have been extracted and are summarized in Table C71.

Table C71. Summary of quarterly notifications of congenital malformations per 100,000 total births, 1965, England and Wales

	March	June	September	December
Central nervous system	493	447	442	484
Anencephalus	164	125	151	176
Hydrocephalus and spina bifida	255	258	230	241
Eye and Ear	57	51	53	50
Alimentary system	217	195	177	206
Cleft lip and palate	142	126	119	139
Rectal and anal atresia	22	22	20	19
Heart and great vessels	79	81	80	81
Respiratory system	23	24	24	18
Uro-genital system	133	124	145	135
Hypospadias, epispadias	73	69	80	69
Limbs	672	631	655	640
Polydactyly	77	67	80	71
Syndactyly	34	28	39	35
Dislocation of hip	45	40	41	41
Talipes	368	364	366	350
Other skeletal	46	37	38	46
Other systems	132	135	127	137
Other malformations	115	111	107	118

The seasonal fluctuations shown above can be compared with those published by Slater and Watson (1964)* based upon an analysis of 12,900 defects from a survey conducted by the College of General Practitioners. The winter excess of anencephaly is confirmed clearly, but only mild confirmation is obtained for the winter excess of congenital dislocation of the hip.

Table C72. Congenital malformations; quarterly notification rates per 100,000 total births, by site of malformation, 1964 and 1965, England and Wales

Site	Quarter							
	March		June		September		December	
	1964	1965	1964	1965	1964	1965	1964	1965
All sites	**2,288**	**1,967**	**2,059**	**1,836**	**1,794**	**1,848**	**1,861**	**1,916**
Central nervous system	533	493	477	447	411	442	446	484
Defects of brain n.o.s.	*3.1*	*5.4*	*4.4*	*6.7*	*7.6*	*5.4*	*3.3*	*3.8*
Anencephalus	155	164	151	125	131	151	162	176
Encephalocele	21	17	15	11	16	10	19	12
Arnold chiari malformation	*2.6*	*1.8*	*1.3*	*1.3*	*2.2*	*0.45*	*0.95*	*1.4*
Hydrocephalus, spina bifida	291	255	261	258	216	230	217	241
Microcephalus	*8.4*	*4.9*	9.6	9.4	*8.1*	11	13	11
Other defects of brain	9.7	*6.3*	*7.0*	*3.6*	*7.6*	*3.2*	*3.8*	*6.2*
Defects of spinal cord n.o.s.	13	12	13	13	11	15	12	12
Other defects of spinal cord	30	27	15	18	12	15	16	20
Eye, ear	71	57	73	51	51	53	54	50
Defects of eye n.o.s.	*4.4*	*3.6*	*5.2*	*2.7*	*1.3*	*5.4*	*4.3*	*2.4*
Anophthalmos, microphthalmos	*4.9*	*1.8*	*3.9*	*1.8*	*4.5*	*4.1*	*4.7*	*1.4*
Buphthalmos	–	–	–	–	–	*0.45*	*0.47*	*0.48*
Cataract	*4.4*	*4.5*	*4.8*	*1.8*	*2.7*	*1.8*	*1.4*	*0.96*
Corneal opacity	*2.6*	–	*1.3*	*0.89*	*1.8*	*1.8*	*0.95*	*0.96*
Other defects of eye	*6.2*	*4.9*	9.6	*5.8*	*3.1*	*5.9*	*5.2*	*2.4*
Defects of ear n.o.s.	*7.9*	*7.6*	*7.0*	*7.1*	*5.8*	*8.6*	*7.1*	*9.1*
Defects of ear causing impairment of hearing	*3.5*	*1.8*	*5.7*	*2.2*	*4.0*	*2.7*	*2.4*	*1.4*
Accessory auricle	19	15	16	14	13	10	14	18
Other defects of ear	18.5	18	20	15	14	12	13	13
Alimentary system	245	217	225	195	197	177	194	206
Defects of alimentary system n.o.s.	*9.7*	*5.8*	*6.5*	*4.9*	11	*6.3*	*6.6*	*5.8*
Cleft lip, cleft palate	156	142	148	126	129	119	121	139
Hiatus hernia	*7.5*	*5.4*	*3.5*	*3.1*	*5.4*	*2.3*	*2.8*	*2.4*
Tracheo-oesophageal fistula, oesophageal atresia and stenosis	16	13	12	17	15	12	10	12
Intestinal atresia	*7.1*	*4.5*	*6.5*	*2.2*	*5.4*	*5.9*	*7.1*	*7.7*
Hirschsprung's disease	*2.2*	*1.3*	*0.87*	*1.3*	*0.45*	*0.45*	*1.9*	*2.9*
Rectal and anal atresia	20	22	21	22	16	20	23	19
Defects of liver and biliary tracts	*4.0*	*2.7*	*2.6*	*1.3*	*2.7*	*1.4*	*2.8*	*3.4*
Other defects of alimentary system	22	20	25	17	14	10	19	13

* Slater, B. C. S., Watson, G. I. (1964) *Brit.J.prev.soc.Med.18, pp 1-7.*

Table C72 – *(Continued)*

Site	Quarter							
	March		June		September		December	
	1964	1965	1964	1965	1964	1965	1964	1965
Heart and great vessels	115	79	94	81	85	80	80	81
Congenital heart disease n.o.s.	59	50	52	51	53	54	47	44
Common truncus	*2.6*	*0.90*	*1.7*	*0.45*	-	-	*0.47*	-
Tetralogy of fallot	*3.1*	*0.90*	*0.87*	*0.45*	*1.3*	*1.4*	*0.95*	*2.4*
Transposition of great vessels	*5.7*	*4.0*	*4.4*	*4.0*	*5.4*	*4.1*	*1.4*	*2.9*
Defects of aortic arch	*3.1*	*2.2*	*2.6*	*1.8*	*2.7*	*2.3*	*1.9*	*4.3*
Interatrial septal defect, persistent foramen ovale	*6.6*	*2.2*	*4.8*	*4.9*	*5.8*	*2.3*	*6.2*	*4.3*
Interventricular septal defect	14	9.4	11	*4.9*	*4.5*	*3.2*	*7.6*	*7.7*
Persistent ductus arteriosus	*8.4*	*0.90*	*5.2*	*6.2*	*4.0*	*4.5*	*5.7*	*4.3*
Endocardial fibroelastosis	*0.88*	-	*0.87*	*0.45*	*2.7*	-	*0.95*	*1.4*
Other defects of heart and great vessels	12	9.0	11	*7.1*	*5.4*	*8.1*	*8.5*	9.6
Respiratory system	35	23	22	24	16	24	23	18
Defects of respiratory system n.o.s.	*3.5*	*2.2*	*2.2*	*2.7*	*1.3*	*2.3*	*1.9*	*1.9*
Defects of nose (arhinia, choanal atresia or stenosis)	*4.0*	*4.5*	*3.5*	*3.1*	*1.8*	*5.4*	*6.6*	*5.3*
Defects of larynx	*2.6*	*1.3*	*1.3*	-	*0.45*	*0.91*	*1.4*	*1.4*
Defects of trachea	*0.88*	*0.45*	*1.3*	*0.45*	*0.90*	*1.4*	-	*0.48*
Defects of bronchus	*0.44*	-	*0.87*	*0.45*	*0.45*	-	-	-
Defects of lung	14	*6.3*	*7.8*	*6.7*	*6.3*	*5.4*	*6.2*	*4.3*
Defects of pleura	*0.88*	-	*0.44*	-	-	*0.45*	-	-
Defects of diaphragm	*7.5*	*6.7*	*3.0*	*8.0*	*3.1*	*5.4*	*2.4*	*2.9*
Defects of mediastinum	-	-	-	*0.45*	*0.45*	-	-	-
Other defects of respiratory system	*1.8*	*1.8*	*1.3*	*2.2*	*1.3*	*2.3*	*4.3*	*1.9*
Uro-genital system	174	133	150	124	136	145	149	135
Defects of uro-genital system	*4.0*	*4.5*	*3.0*	*2.7*	*3.1*	*5.0*	*3.8*	*2.9*
Renal agenesis	*7.9*	*1.8*	*3.5*	*5.8*	*4.9*	*5.4*	*7.6*	*4.3*
Polycystic kidney, all forms	*6.2*	*3.6*	*4.4*	*4.0*	*5.4*	*3.6*	*2.8*	*4.8*
Obstructive defects of urinary tract (hydronephrosis, hydro-ureter)	*6.6*	*2.7*	*4.8*	*2.7*	*4.5*	*3.2*	*5.2*	*1.4*
Other defects of kidney and ureter	*4.9*	*4.5*	*5.7*	*3.1*	*3.6*	*3.6*	*3.3*	*3.4*
Other defects of bladder and urethra	10	*7.6*	*6.5*	*4.9*	*6.3*	*5.4*	*5.2*	*4.8*
Hypospadias, epispadias	86	73	75	69	70	80	70	69
Other defects of genitalia (includes female pseudohermaphroditism)	42	27	41	27	30	33	41	32
Indeterminate sex (includes true hermaphroditism)	*5.7*	*6.7*	*6.1*	*2.2*	*7.2*	*5.4*	9.5	12

Table C72 - *(continued)*

Site	Quarter							
	March		June		September		December	
	1964	1965	1964	1965	1964	1965	1964	1965
Limbs	750	672	696	631	617	655	619	640
Defects of upper limb n.o.s.	15	22	16	14	10	10	13	*8.6*
Defects of lower limb n.o.s.	52	45	54	35	35	39	39	33
Reduction deformities (amelia, hemimelia, phocomelia, etc.)	18	17	14	14	16	20	19	16
Polydactyly	81	77	74	67	65	80	68	71
Syndactyly	38	34	35	28	39	39	36	35
Dislocation of hip	44	45	38	40	33	41	41	41
Talipes	419	368	391	364	353	366	345	350
Other defects of shoulder girdle, upper arm, and forearm	9.7	9.0	*5.7*	*5.8*	*6.7*	11	*8.5*	17
Other defects of hand	42	38	45	37	34	33	33	40
Other defects of pelvic girdle and lower limb	30	17	24	25	25	16	17	29
Other skeletal	65	46	51	37	51	38	50	46
Defects of skeleton n.o.s.	*3.5*	*3.1*	*3.5*	*1.8*	*4.5*	*4.1*	*4.7*	*4.8*
Defects of skull and face	27	17	23	16	20	14	24	21
Spinal curvature, scoliosis, lordosis	*1.8*	*2.7*	*3.5*	*1.3*	*2.2*	*3.2*	-	*1.4*
Other defects of spine	9.7	*6.7*	8.7	*5.8*	9.0	*7.7*	*8.5*	*8.2*
Defects of ribs and sternum	*8.4*	*4.0*	*3.0*	*2.7*	*5.8*	*3.6*	*3.3*	*4.3*
Chonorodystrophy	*4.9*	*2.7*	*3.5*	*3.6*	*3.1*	*1.4*	*3.3*	*2.4*
Osteogenesis imperfecta	*3.1*	*2.2*	*1.7*	-	*2.2*	*1.8*	*1.4*	*1.9*
Other generalised defects of skeleton (including arachnodactyly)	*6.6*	*6.7*	*4.4*	*5.8*	*3.6*	*3.2*	*4.3*	*1.9*
Other systems	179	132	149	135	130	127	125	137
Branchial cleft, cyst or fistula pre-auricular sinus	*5.3*	*2.7*	*3.5*	*2.7*	*4.0*	*2.7*	*2.8*	*4.8*
Other defects of face and neck	13	11	12	*8.5*	13	12	*5.7*	13
Defects of muscles	12	11	10	*5.8*	*6.7*	6.8	9.5	*8.2*
Vascular defects of skin, subcutaneous tissues, and mucous membranes (including lymphatic defects)	76	55	66	58	49	56	54	47
Other defects of skin (including ichthyosis congenita)	27	21	20	29	26	20	25	30
Defects of hair, nails, and teeth	*3.5*	*1.3*	*4.8*	*2.2*	*1.3*	*0.45*	*1.4*	*2.9*
Defects of peripheral vascular system other than above (including arteriovenous aneurysm, etc.)	*3.1*	*1.8*	*1.3*	*1.3*	*0.90*	*1.8*	*1.9*	*0.48*
Defects of spleen	*2.6*	-	*1.7*	*0.45*	*1.3*	*0.91*	-	*0.96*
Defects of endocrine glands	*3.1*	*1.3*	*1.3*	*1.3*	*0.90*	*1.8*	*3.3*	*1.4*
Exomphalos, omphalocele	34	27	28	26	26	25	21	29

Table C72 - *(continued)*

Site	Quarter							
	March		June		September		December	
	1964	1965	1964	1965	1964	1965	1964	1965
Other malformations	120	115	121	111	101	107	121	118
Congenital malformations n.o.s.	*7.5*	*6.7*	*6.1*	*6.7*	*5.8*	*5.4*	*3.8*	*7.2*
Multiple malformations n.o.s.	9.7	12	11	*8.5*	9.0	14	14	*8.6*
Cyclops	*1.3*	*0.45*	*0.87*	*0.90*	*2.2*	*0.91*	*0.47*	-
Other monster	*0.88*	*1.3*	*2.6*	*0.45*	*1.3*	*1.8*	*0.47*	*0.96*
Conjoined twins	-	*0.45*	*2.2*	*0.45*	*0.90*	*0.45*	-	*0.96*
Situs inversus	-	-	-	-	*0.45*	-	-	-
Mongolism	81	64	81	67	60	60	77	73
Other chromosomal syndromes	*1.8*	*2.2*	*2.2*	*1.8*	*1.3*	*2.7*	*2.8*	*2.4*
Other specific syndromes	*3.5*	*6.3*	*5.7*	*7.6*	*5.4*	*3.6*	*8.1*	*4.8*
Other	15	22	9.6	18	14	19	15	20

Congenital malformations of circulatory system

Only a few of these malformations are recognised at birth (about 80 per 100,000 total births); almost double this number die by the end of the first year of life, and the final death rate for all ages is nearly three times as large. Table C73 gives death rates for broad age-groups over the past 15 years, and shows that although the rate has ranged between 38 to 53 deaths per million living, there has been only a small general increase throughout the period.

The only consistent change of importance is restricted to infants and children for whom rates have been increasing in recent years. The most likely explanation for this is greater interest in these conditions, and especially the advent of more powerful diagnostic methods, combined with direct vision at operation.

Table C73. Congenital malformations of the circulatory system (ICD No. 754); deaths and death rates per million living, 1951 to 1965, England and Wales

Age	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
							Deaths								
All ages	**2,013**	**1,694**	**1,699**	**1,715**	**1,763**	**1,808**	**2,037**	**1,994**	**2,023**	**2,170**	**2,270**	**2,417**	**2,494**	**2,360**	**2,302**
0-	1,028	1,095	1,114	1,161	1,075	1,183	1,278	1,254	1,308	1,359	1,428	1,574	1,566	1,583	1,507
1-	138	124	124	106	156	117	131	158	142	167	159	179	179	179	151
5-	93	93	88	92	108	109	123	105	146	169	181	160	165	131	156
15-	344	243	223	209	259	234	255	265	237	245	255	254	281	243	209
45-	306	96	104	105	125	118	189	165	137	164	172	174	194	160	180
65 and over	106	43	46	42	40	47	61	47	53	66	75	76	109	64	99
							Death rates per million living*								
All ages	**45.9**	**38.5**	**38.5**	**38.7**	**39.7**	**40.5**	**45.4**	**44.2**	**44.6**	**47.4**	**49.1**	**51.7**	**53.0**	**49.8**	**48.2**
0-	1,514	1,625	1,628	1,723	1,610	1,689	1,767	1,693	1,747	1,731	1,760	1,877	1,834	1,807	1,747
1-	45.1	43.5	45.6	39.9	59.3	44.8	49.8	59.4	52.3	59.6	55.4	60.2	58.3	56.6	46.3
5-	15.5	14.8	13.6	13.9	16.0	15.9	17.7	15.1	21.0	24.4	26.0	23.5	24.4	19.4	23.0
15-	18.5	13.1	12.1	11.5	14.3	13.0	14.2	14.8	13.2	13.6	14.0	13.6	14.8	12.7	10.9
45-	28.9	8.94	9.56	9.52	11.2	10.4	16.5	14.3	11.7	13.9	14.5	14.7	16.5	13.6	15.2
65 and over	21.9	8.74	9.25	8.31	7.83	9.09	11.6	8.85	9.87	12.1	13.6	13.6	19.4	11.2	17.0

* At ages under 1 year, based on million live births.

DEATHS FROM ACCIDENTS AND VIOLENCE

Deaths in working places

A dual classification of these deaths is provided.

(a) Deaths at work, if so reported on the death certificate, and

(b) deaths in various working places, of which mines and quarries are tabulated separately from industrial place and premises.

Deaths in (a) include not only deaths in factories, mines and quarries, ships and other workplaces, but also persons dying at home while working, or in other private premises while engaged in employment (such as window cleaning and home decoration). They normally only include persons aged 15 years and over. Deaths in (b) can include persons of any age who die in mines, quarries and industrial sites; even adults dying in such places may not be at work, but only visiting or possibly trespassing.

In addition, information is available both about the external cause of accident and about the nature of the injury. Details for both sexes in broad age-groups are given in Tables C75(A) to C76.

During the five years 1961-1965 there has been a decrease in the number of deaths both of persons at work, and of all persons in mines and quarries and industrial locations. There has been a slight increase in deaths in mines and quarries in 1965 (231) compared with the previous year (218), but this is much less than the number in 1961 (302). Some individual causes, however, have shown an increase. Deaths from falls in industrial locations have increased slightly (174, 179 and 190 in the last three years); deaths caused by machinery show no clear evidence of change although the number dying from internal injuries has been slowly increasing (71, 78, 83, 89 in the last 4 years).

Some causes of death tend to produce clusters of deaths, e.g. explosions in mines, gassing in factories, so that the application of routine standards of judging change may be fallacious. There does appear, however, to be a real reduction in deaths due to poisoning while at work (39, 37, 28, 39, 17) especially in the last year, 1965.

A large proportion of poisoning deaths at work are caused by carbon monoxide, and it is possible to compare deaths from accidental gassing reported by Her Majesty's Chief Inspector of Factories with information obtained at death registration covering a wider field.

Table C74. Deaths from accidental gassing associated with work and working places, 1961 to 1965, England and Wales

Year	All gassing accident deaths			Deaths caused by carbon monoxide		
	Reported to Factory Inspectorate	Death registration		Reported to Factory Inspectorate	Death registration	
		Industrial location	At work		Industrial location	At work
1961	14	19	36	8	12	20
1962	18	19	34	12	14	23
1963	15	15	24	3	5	13
1964	15	16	31	5	9	22
1965	8	6	12	4	4	9

Note: Some poisons such as benzol can be tabulated either as "gases, fumes and vapours" or as "solids and liquids" according to the description of the cause of death.

Table C75(A). Accidental deaths by place of occurrence, by sex and age, 1961 to 1965, England and Wales

Deaths from accident at work

		1961	1962	1963	1964	1965
Total deaths	Males	1,089	1,013	983	989*	938
	Females	28	34	20	45	39
By age: 15-	M	580	499	533	523	510
	F	12	10	6	15	9
45-	M	440	458	404	409	386
	F	7	17	5	20	18
65 and over	M	69	56	46	55	42
	F	9	7	9	10	12
					*2 under the age of 15	
Cause of Accident:						
E890-E895 Gassing	M	3	34	23	2	12
	F	-	1	1	2	-
E900-E904 Falls	M	288	301	280	282	272
	F	14	17	12	22	26
E910 Falling object	M	209	187	199	196	188
	F	2	2	-	1	-
E912 Machinery	M	232	206	186	215	200
	F	2	3	-	2	4
E916, E917 Fire, explosion, hot substance, corrosive liquid and steam	M	94	74	41	55	73
	F	3	5	6	8	6
E936 Other and unspecified	M	10	14	14	10	12
	F	-	-	1	1	-

Table C75(B). Deaths from accident in mine or quarry

			1961	1962	1963	1964	1965
Total deaths		Males	301	240	277	216	230
		Females	1	-	3	2	1
	By age:	0-	5	10	10	9	6
		15-	147	108	150	106	123
		45-	143	121	119	100	99
		65 and over	7	1	1	3	3
Cause of accident:							
E900-E904	Falls	M	*	*	18	17	17
		F	*	*	1	1	1
E910	Falling object	M	94	72	105	81	73
		F	-	-	-	-	-
E911	By vehicle	M	43	45	51	29	29
		F	-	-	-	-	-
E912	By machinery	M	50	48	46	55	50
		F	-	-	-	-	-
E916	Fire and explosion	M	47	30	2	5	31
		F	-	-	-	-	-
E925	Mechanical suffocation	M	31/	16/	30	12	15
		F	-	-	-	-	-
E929	Drowning	M	14	12	11	7	3
		F	-	-	2	-	-
E910-E936	Accident other than fall or poisoning	M	279	224	257	199	212
		F	-	-	2	1	-

* Not available

/ An estimate derived from the difference (At work - industrial place and premises). Corresponding figures for 1963, 1964 and 1965 were:

males	35/	17/	19/
females	-	-	-

Table C75(C). Deaths from accident in industrial place and premises

			1961	1962	1963	1964	1965
Total deaths		Males	**534**	**547**	**506**	**514**	**495**
		Females	**10**	**10**	**10**	**9**	**15**
	By age: 0-	M	15	10	13	14	22
		F	2	1	4	-	2
	15-	M	298	274	268	268	259
		F	2	3	3	3	4
	45-	M	198	233	204	212	194
		F	3	4	2	5	8
	65 and over	M	23	30	21	20	20
		F	3	2	1	1	1
Cause of accident:							
E890-E895	Gassing	M	19	19	15	16	6
		F	-	-	-	-	-
E900-E904	Fall	M	173	209	172	175	183
		F	4	5	2	4	7
E910	Falling object	M	95	86	73	96	86
		F	1	1	1	1	-
E912	Machinery	M	106	98	94	102	106
		F	2	1	-	2	3
E916	Fire and explosion	M	21	28	28	33	25
		F	1	-	2	2	2
E929	Drowning	M	20	26	18	14	15
		F	1	-	2	-	1

Table C76. Deaths from accident caused by machinery (ICD No. AE142), classified by nature of injury, 1961 to 1965, England and Wales

			1961	1962	1963	1964	1965
AE142	**Accident caused by machinery**	M	**241**	**224**	**207**	**234**	**215**
		F	**7**	**6**	**4**	**4**	**9**
AN138	Fracture of skull	M	68	59	44	63	52
		F	-	2	2	2	5
AN139	Fracture of spine and trunk	M	34	34	39	38	30
		F	1	-	-	-	3
AN144	Internal injury	M	72	70	78	82	88
		F	3	1	-	1	1

Suicide

Suicide was comprehensively reviewed in Part III of the *Registrar General's Statistical Review* for 1961, that survey being inspired by the passing of the *Suicide Act* of 1961 by which suicide ceased to be a criminal offence. "One of the arguments against amending the law" to quote the *Review* "was that it would lead to an increase in suicides. No evidence was found to support the claim that to treat suicidal attempts as criminal acts was a deterrent. Scotland, with no law against suicide, had lower suicide rates than England and Wales." The experience in England and Wales since the passing of the Act is set out below.

Table C77. Suicide, death rates per million living and Standardised Mortality Ratios, by sex, 1961 to 1965, England and Wales

Year	Number of deaths from suicide		Death rate per million living		Standardised Mortality Ratio (1950-52 = 100)	
	Males	Females	Males	Females	Males	Females
1961	3,025	2,175	135	91	99	127
1962	3,264	2,324	144	97	105	135
1963	3,307	2,407	145	99	106	140
1964	3,175	2,391	138	98	101	138
1965	2,942	2,219	127	90	93	127

In the short period under review, suicides reached their highest level in 1963, a year in which mortality was abnormally high due largely to a very severe winter. The number of deaths assigned to suicide in 1965 were in total slightly fewer than in 1961; the small increase in number of deaths of females can be attributed to the increase in population. Both death rates and Standardised Mortality Ratios have also decreased.

The death rate for males is higher than that for females, and the excess of male mortality varies with age (see Table C78). It is more than twice the rate for females between the ages of 15 and 25 years, but less than fifty per cent in excess at ages 45 to 64. The change in death rates is not the same at all ages: if the rates for 1961-1965 are compared with those during the quinquennium 1956-1960 the only age-groups showing a clear decline in mortality were those of males aged 45 and over. There was an increase in mortality in both sexes at ages 25-44, for males the death rate increased from 120 to 134 and for females from 66 to 85. Among females, there was a slight increase at ages 45-64 and in males the biggest proportional increase was in the age-group 15-24 years, from 46 to 62 deaths per million living.

There are marked geographical differences in the mortality from suicide, as set out in Table C78, although it is not easy to summarise them in any succinct form. Wales generally has low rates, but not always the lowest for any particular sex and

Table C78. Suicide 1956-1960 and 1961-1965, England and Wales

Death rates per million living by sex and age for regions and conurbations

Area	Period	Males					Females				
		All ages over 15	15-	25-	45-	65 and over	All ages over 15	15-	25-	45-	65 and over
England and Wales	**1956-60**	**190**	**46**	**120**	**262**	**406**	**114**	**22**	**66**	**170**	**182**
	1961-65	**181**	**62**	**134**	**241**	**343**	**121**	**26**	**85**	**173**	**181**
Standard regions:											
Northern	1956-60	191	45	118	275	413	88	*13*	59	134	138
	1961-65	171	48	132	234	315	100	*16*	72	152	144
East and West Ridings	1956-60	205	55	133	271	437	116	32	54	171	207
Yorkshire and Humberside	1961-65	189	64	129	256	373	121	24	80	171	199
North Western	1956-60	214	63	131	287	462	129	23	66	188	231
	1961-65	202	69	150	263	388	128	20	79	177	221
North Midland	1956-60	175	38	100	256	377	105	*13*	65	149	192
East Midland	1961-65	173	42	119	235	379	110	15	64	161	202
Midland	1956-60	189	35	109	262	502	111	17	55	181	194
West Midland	1961-65	168	57	105	242	387	107	26	72	162	170
Eastern	1956-60	169	37	115	237	333	108	21	63	164	161
East Anglia	1961-65	176	56	117	242	363	117	23	68	179	176
Southern	1956-60	157	42	107	215	351	104	*20*	65	161	144
London and South Eastern	1956-60	198	62	131	265	389	129	30	86	185	186
South Eastern	1961-65	186	72	150	240	317	135	34	106	190	178
South Western	1956-60	194	27	125	267	418	111	*15*	62	169	162
	1961-65	165	50	116	218	326	115	23	76	163	168
Wales	1956-60	162	22	95	237	332	80	*20*	42	131	109
	1961-65	159	57	115	215	282	89	23	67	119	132
Conurbations:											
Tyneside	1956-60	224	*49*	137	304	533	112	*(17)*	69	156	224
	1961-65	194	*53*	152	265	352	121	*(17)*	79	183	194
West Yorkshire	1956-60	219	68	128	295	455	127	*31*	61	177	225
	1961-65	196	92	138	250	368	127	*23*	83	160	226
South East Lancashire	1956-60	237	79	152	314	483	129	*22*	68	190	220
	1961-65	224	78	175	282	432	141	21	88	194	247
Merseyside	1956-60	153	*31*	109	221	314	96	*16*	62	141	175
	1961-65	167	46	141	242	267	92	13	75	133	135
West Midlands	1956-60	191	38	114	255	524	119	*21*	62	188	220
	1961-65	171	62	107	239	418	120	36	85	173	191
Greater London	1956-60	204	72	138	268	411	135	34	91	193	201
	1961-65	213	89	187	260	355	150	44	128	203	194

The rates for the new standard regions prior to 1965 have been calculated by application of factors to the old regions.

age-group: and conurbations on the whole have rates above the average, with the notable exception of Merseyside, and to a lower degree females in Tyneside conurbation. The regional differences follow the pattern set by the conurbations in them; the North West Region has high rates for males, vying with those for the South East or East and West Ridings.

The changes between the two periods deserve closer study. The increase in suicide mortality for young adult males (15-24 years) of about 35 per cent for the whole country has not been a uniform increase. It amounted to only 11 per cent in the East Midland Region (former North Midland) and North West Region, but was an increase of 85 per cent for the South West Region and 159 per cent for Wales. Numbers are, however, small at this age, and the females do not confirm this pattern so clearly. Among the conurbations the increase at this age is greatest in the West Midlands (an increase of 63 per cent for the two sexes).

MISCELLANEOUS

Tetanus

The record of individual deaths due to tetanus that formerly appeared in Part III (Commentary Volume) now appears in the *Registrar General's Statistical Review* of Part I for 1965 as Table H2.

As in previous years, many of the incidents giving rise to tetanus infection took place in or were associated in one way or another with objects used in the garden and its surroundings. The incidents include penetrating wounds from flower stalks (2), wood splinters (2) or thorn (1), or falls under circumstances where *Cl. tetani* infection could occur, as in garden, in a field, or playing football. The presence of this organism would not be expected in the case of two women who died one after operation for ovarian cyst, the other after a so-called "natural" abortion.

All cases during the past five years are summarised below.

Table C79. Deaths due to tetanus, by sex and age, and rates per million living by age, 1961 to 1965, England and Wales

		1961	1962	1963	1964	1965	Total
Assigned to ICD No. 061	Males	15	13	10	13	15	66
	Females	9	6	3	8	6	32
Assigned elsewhere	Males	15	8	4	7	7	41
	Females	2	2	4	1	5	14
All cases		**41**	**29**	**21**	**29***	**33**	**153**
							Annual death rate
By age:	0-	-	1	-	1	-	0.5
	1-	2	-	1	1	-	0.3
	5-	8	7	6	4	6	0.9
	15-	5	2	2	2	5	0.5
	25-	6	2	2	3	6	0.2
	45-	10	7	4	11	8	0.3
	65-	6	4	4	3	7	1.3
	75 and over	4	6	2	3	1	1.8

* 1 of unknown age

The incidence per head of population rises to its highest level after the age of 65; children between the ages of 5-14 years have higher rates than young children or young adults. The proportion of females is low under the age of 25 (only 5/53); the disease accounts for over 40 per cent of cases (41/99) above this age.

Deaths associated with vaccination or other prophylactic inoculation

Nine deaths registered in 1965 were associated with vaccination against smallpox (five deaths) and with immunization against other diseases (four deaths). This is an increase on the number recorded in previous years (1964 six deaths; 1963 four deaths).

Four of the five deaths associated with vaccination against smallpox were assigned directly to this procedure as the underlying cause.

(a) Complication of vaccination:

Generalized vaccinia (E940)

(1) Male age 1 year dying from bronchopneumonia and also suffering from infantile eczema.

Post-vaccinal encephalitis (E941)

(2) Male age 1 year dying from haemorrhagic bronchopneumonia following encephalomyelitis.

Other complications (E942)

(3) Female age 10 months, the cause of death being described as vaccinia gangrenosa and dissemination due to hypogammaglobulinaemia, and also suffering from thrombocytopenia purpura. The home address of this child was Baghdad.

(4) Female age 72 years, also with a foreign home address (USA) dying from renal failure due to disseminated vaccinia with gangrene and also suffering from chronic lymphatic leukaemia.

The last death was assigned to ICD No. 224. Benign neoplasms of endocrine glands.

(5) Female age 50 years dying from left sided cardiac failure due to haemorrhage into a phaeochromocytoma and due to vaccinia. Fatty infiltration of the liver also contributed to death.

(b) Complications of other prophylactic inoculations:

Diphtheria antitoxin

(1) Female age 34 years dying from anaphylactic shock and also suffering from streptococcal tonsillitis.

Oral poliomyelitis vaccine

(2) Male age 22 years dying from anaphylactic shock. Death took place in hospital, and the report after an inquest stated "Developed anaphylaxis after taking oral poliomyelitis vaccine".

T.A.B.T.

(3) Male age 46 years dying from pontine haemorrhage following inoculation.

Triple antigen

(4) Female age 4 years. The second dose of antigen was given to this child at the age of four months and this was followed by post-immunization encephalitis. Death was due to asphyxia, the result of an epileptic fit. Severe sub-normality was also recorded.

Mass miniature radiography

Radiographic examination of the chest on a large scale for the detection of tuberculosis was introduced in 1943 during the war years. Since 1955 a ten per cent sample of records have been summarised in the *Registrar General's Statistical Review* of 1956, Part III, Commentary, and this is an appropriate time to scrutinise the results obtained today, compared with those ten years ago. The total number of examinations has not changed much:

1955	3,475,710
1965	3,263,670

but the number of cases of respiratory tuberculosis requiring treatment or close supervision detected is much lower.

1955	7,564	2.2 per thousand examinations
1965	3,515	1.1 per thousand examinations

The composition of groups surveyed at the two dates can be compared when expressed as a percentage of the sex/age population.

		15-	25-	35-	45-	55-	65 and over
1955	Males	18.3	13.2	11.3	9.4	7.4	2.4
	Females	17.7	10.0	7.8	6.1	3.6	1.2
1965	Males	11.6	12.9	12.5	11.7	9.4	3.5
	Females	12.0	8.2	8.5	7.2	4.6	1.8

There has been a large decrease in the proportion of young persons examined, but a slight increase in the proportion at older ages.

The source of the persons examined gives an indication of the means of selection for examinations, and the larger groups are considered below.

Table C80. Number of examinations made by mass miniature radiography, by category of persons examined, and rates per 1,000 examinations requiring treatment, 1955 and 1965, England and Wales

	Number of examinations (in thousands)		Rates	
	1955	1965	1955	1965
General surveys in factories and offices	1,596	1,748	1.5	0.7
General public volunteers	931	957	2.0	0.8
Referred by general practitioners	173	293	11.4	4.1
Contacts, unknown	65	66	3.4	4.0 Mantoux test 2.5 Other
School children	353	55	0.7	2.0 Mantoux test 0.25 Other
Psychiatric hospitals	62	65	3.6	1.1
Persons in prisons, borstal establishments etc.	7	42	10.9	3.2

The greatest reduction in numbers has been in the number of school children examined, but the number examined in factories and offices has increased, as well as the number referred by general practitioners. The changing importance of psychiatric hospitals and penal institutions is noteworthy, as well as the high rate of tuberculosis discovered in the latter.

The rates have decreased in most cases by one half or more with the exception of contacts of known cases, or by inference from the Mantoux test. The highest rates are among subjects referred by general practitioners; this would be expected as they are professional diagnosticians. The next highest at both dates were the prisons groups, which should be reasonably representative of the prison population.

The sources from which the persons examined come are related to the ages of the subjects. Under the age of 15 they are mainly school groups, general practitioners referrals or contacts, but they include 6,290 general public volunteers (there were 22,210 in 1955). In the age-group 65 years and over general public volunteers form 52 per cent of all examined - the same for both dates.

Other medical conditions are revealed as a result of these examinations, and the rates per thousand examined are set out for the two dates.

	1955		1965	
	Males	Females	Males	Females
Malignant neoplasms	0.7	0.1	0.6	0.4
Non-malignant neoplasms	0.2	0.3	0.1	0.2
Sarcoidosis including enlarged hilar glands	0.1	0.1	0.2	0.3
Congenital cardiac abnormality of the vascular system	0.2	0.3	0.1	0.2

Not only has the yield of cases of tuberculosis declined, but so has that of other conditions listed above, apart from sarcoidosis in which greater clinical interest has been taken in more recent years. This seems strange, in view of the increasing use of this service by general practitioners and the known increase in patients with malignant neoplasms of the lung. It suggests that the sample of persons now being screened is less selective than in the past; and this suggestion is supported by the greater number of subjects who are seen at examinations in factories and offices, and fewer school children.

The rates for some conditions discovered are much higher among persons aged 65 and over. They include:

	1955		1965	
	Males	Females	Males	Females
Malignant neoplasms	7.0	1.7	13.7	2.7
Non-malignant neoplasms	1.2	2.2	0.8	1.2
Acquired cardio-vascular abnormality	14.5	18.8	16.9	23.8
Pneumoconiosis	12.2	0.5	2.4	0.3

Table C81. Mass miniature radiography, number of examinations made by mass radio-

(The total numbers of examinations have been derived from a 10 per cent sample of

Category of person examined	Males											
	Under 14	14	15-	20-	25-	35-	45-	55-	60-	65 and over	Not stated	All ages
Out-patients and in-patients of hospitals	50	70	440	920	1,560	1,680	1,850	1,060	920	1,310	10	9,870
H.M. Forces intakes	–	–	680	100	40	10	10	–	–	–	–	840
School children (Mantoux test)	3,800	2,120	1,150	10	–	–	–	–	–	–	–	7,080
School children (School groups)	1,410	2,270	13,220	80	–	–	–	–	–	–	–	16,980
Contacts (Mantoux test)	760	370	250	70	50	440	270	30	10	10	–	2,260
Other contacts	1,490	1,080	5,550	3,940	6,550	5,760	5,270	1,800	1,560	830	10	33,840
Persons covered by special surveys	–	–	260	380	840	1,140	760	280	200	70	–	3,930
Persons in prisons, borstals etc.	180	260	10,210	6,910	6,760	4,340	2,540	840	700	2,660	20	35,420
Persons in factories/ offices (General surveys)	–	690	112,860	135,840	251,360	257,640	222,860	90,930	59,180	12,990	30	1,144,380
General public volunteers	1,490	1,850	36,260	41,790	90,530	94,650	80,680	34,780	28,030	38,620	10	448,690
Ante-natal cases	–	–	–	–	–	–	–	–	–	–	–	–
Psychiatric hospitals	350	120	1,570	2,560	4,600	6,090	6,650	3,290	3,000	4,060	40	32,330
Total	9,530	8,830	182,450	192,600	362,290	371,750	320,890	133,010	93,600	60,550	120	1,735,620
Persons referred by general practitioners	2,920	1,100	13,170	15,690	28,660	28,870	28,540	14,700	13,380	15,920	10	162,960
Total (all groups)	**12,450**	**9,930**	**195,620**	**208,290**	**390,950**	**400,620**	**349,430**	**147,710**	**106,980**	**76,470**	**130**	**1,898,580**

graphy units by sex, age and category of person examined, 1965, England and Wales

record cards)

Females											Persons	Category of person examined
Under 14	14	15–	20–	25–	35–	45–	55–	60–	65 and over	Not stated	All ages	All ages	
20	30	750	1,080	2,330	2,380	2,330	1,210	900	1,800	–	12,830	22,700	Out-patients and in-patients of hospitals
–	–	30	–	–	–	–	–	–	–	–	30	870	H.M. Forces intakes
3,270	1,760	670	20	–	–	–	–	–	–	–	5,720	12,800	School children (Mantoux test)
1,660	2,060	10,970	210	–	–	–	–	–	–	–	14,900	31,880	School children (School groups)
780	390	440	90	300	850	280	40	30	30	–	3,230	5,490	Contacts (Mantoux test)
2,900	1,310	5,730	3,230	3,700	4,280	3,330	1,060	480	830	–	26,850	60,690	Other contacts
10	–	100	80	100	280	110	10	30	30	–	750	4,680	Persons covered by special surveys
20	10	850	610	830	570	520	210	280	3,110	–	7,010	42,430	Persons in prisons, borstals etc.
–	320	139,570	111,090	93,650	113,450	97,150	32,790	11,130	4,140	50	603,340	1,747,720	Persons in factories/ offices (General surveys)
1,340	1,610	47,230	43,930	101,320	115,310	93,750	38,980	29,450	35,920	–	508,840	957,530	General public volunteers
–	–	2,510	7,210	8,070	1,940	40	–	–	–	10	19,780	19,780	Ante-natal cases
140	60	1,300	1,730	3,120	5,090	5,940	2,950	3,180	8,700	40	32,250	64,580	Psychiatric hospitals
10,140	7,550	210,150	169,280	213,420	244,150	203,450	77,250	45,480	54,560	100	1,235,530	2,971,150	Total
2,450	790	14,770	14,020	24,040	23,350	21,530	9,750	7,680	11,170	10	129,560	292,520	Persons referred by general practitioners
12,590	**8,340**	**224,920**	**183,300**	**237,460**	**267,500**	**224,980**	**87,000**	**53,160**	**65,730**	**110**	**1,365,090**	**3,263,670**	**Total (all groups)**

Table C82. Mass miniature radiography, (a) numbers of cases of respiratory radiography units, (b) rates per 1,000 examinations, by sex, age, and

Category of person examined		Males											
		Under 14	14	15–	20–	25–	35–	45–	55–	60–	65 and over	Not stated	All ages
Out-patients and in-patients of hospitals	(a)	–	–	–	1	1	2	6	–	2	3	–	15
	(b)	–	–	–	1.1	0.6	1.2	3.2	–	2.2	2.3	–	1.5
H.M. Forces intakes	(a)	–	–	–	1	–	–	–	–	–	–	–	1
	(b)	–	–	–	10.0	–	–	–	–	–	–	–	1.2
School children (Mantoux test)	(a)	8	1	2	–	–	–	–	–	–	–	–	11
	(b)	2.1	0.5	1.7	–	–	–	–	–	–	–	–	1.6
School children (School groups)	(a)	3	–	–	–	–	–	–	–	–	–	–	3
	(b)	2.1	–	–	–	–	–	–	–	–	–	–	0.2
Contacts (Mantoux test)	(a)	–	–	–	–	–	3	1	–	–	–	–	4
	(b)	–	–	–	–	–	6.8	3.7	–	–	–	–	1.8
Other contacts	(a)	–	2	6	6	16	12	3	3	3	4	–	55
	(b)	–	1.9	1.1	1.5	2.4	2.1	0.6	1.7	1.9	4.8	–	1.6
Persons covered by special surveys	(a)	–	–	–	2	1	6	–	–	–	–	–	9
	(b)	–	–	–	5.3	1.2	5.3	–	–	–	–	–	2.3
Persons in prisons, borstals, etc.	(a)	–	–	3	7	20	21	23	11	15	16	–	116
	(b)	–	–	0.3	1.0	3.0	4.8	9.1	13.1	21.4	6.0	–	3.3
Persons in factories/ offices (General surveys)	(a)	–	–	49	79	203	189	164	95	74	35	1	889
	(b)	–	–	0.4	0.6	0.8	0.7	0.7	1.0	1.3	2.7	33.3	0.8
General public volunteers	(a)	1	–	23	40	97	81	74	40	52	56	–	464
	(b)	0.7	–	0.6	1.0	1.1	0.9	0.9	1.2	1.9	1.5	–	1.0
Ante-natal cases	(a)	–	–	–	–	–	–	–	–	–	–	–	–
	(b)	–	–	–	–	–	–	–	–	–	–	–	–
Mental hospitals and mental institutions	(a)	–	–	1	2	3	9	11	10	6	4	–	46
	(b)	–	–	0.6	0.8	0.7	1.5	1.7	3.0	2.0	1.0	–	1.4
Total	(a)	12	3	84	138	341	323	282	159	152	118	1	1,613
	(b)	1.3	0.3	0.5	0.7	0.9	0.9	0.9	1.2	1.6	1.9	8.3	0.9
Persons referred by general practitioners	(a)	4	2	37	72	174	145	183	88	83	79	–	867
	(b)	1.4	1.8	2.8	4.6	6.1	5.0	6.4	6.0	6.2	5.0	–	5.3
Total (all groups)	(a)	**16**	**5**	**121**	**210**	**515**	**468**	**465**	**247**	**235**	**197**	**1**	**2,480**
	(b)	**1.3**	**0.5**	**0.6**	**1.0**	**1.3**	**1.2**	**1.3**	**1.7**	**2.2**	**2.6**	**7.7**	**1.3**

tuberculosis requiring treatment or close clinic supervision observed by mass category of person examined, 1965, England and Wales

Females											Persons		
Under 14	14	15–	20–	25–	35–	45–	55–	60–	65 and over	Not stated	All ages	All ages	Category of person examined
–	–	–	–	3	2	1	–	2	3	–	11	26	(a) Out-patients and in-patients of hospitals
–	–	–	–	1.3	0.8	0.4	–	2.2	1.7	–	0.9	1.1	(b)
–	–	–	–	–	–	–	–	–	–	–	–	1	(a) H.M. Forces intakes
–	–	–	–	–	–	–	–	–	–	–	–	1.1	(b)
11	3	–	–	–	–	–	–	–	–	–	14	25	(a) School children (Mantoux test)
3.4	1.7	–	–	–	–	–	–	–	–	–	2.4	2.0	(b)
2	–	3	–	–	–	–	–	–	–	–	5	8	(a) School children (School groups)
1.2	–	0.3	–	–	–	–	–	–	–	–	0.3	0.3	(b)
–	–	–	–	1	3	1	–	–	–	–	5	9	(a) Contacts (Mantoux test)
–	–	–	–	3.3	3.5	3.6	–	–	–	–	1.5	1.6	(b)
4	1	4	3	4	8	3	1	–	1	–	29	84	(a) Other contacts
1.4	0.8	0.7	0.9	1.1	1.9	0.9	0.9	–	1.2	–	1.1	1.4	(b)
–	–	–	–	–	–	–	–	–	–	–	–	9	(a) Persons covered by special surveys
–	–	–	–	–	–	–	–	–	–	–	–	1.9	(b)
–	–	3	3	5	1	1	1	–	4	–	18	134	(a) Persons in prisons, borstals, etc.
–	–	3.5	4.8	6.0	1.8	1.9	4.8	–	1.3	–	2.6	3.2	(b)
–	–	43	51	65	68	31	9	2	–	–	269	1,158	(a) Persons in factories/offices (General surveys)
–	–	0.3	0.5	0.7	0.6	0.3	0.3	0.2	–	–	0.4	0.2	(b)
–	1	18	21	70	87	48	20	12	18	–	295	759	(a) General public volunteers
–	0.6	0.4	0.5	0.7	0.8	0.5	0.5	0.4	0.5	–	0.6	0.8	(b)
–	–	–	7	11	2	–	–	–	–	–	20	20	(a) Ante-natal cases
–	–	–	1.0	1.4	1.0	–	–	–	–	–	1.0	1.0	(b)
–	–	1	–	3	1	6	1	2	9	–	23	69	(a) Mental hospitals and mental institutions
–	–	0.8	–	1.0	0.2	1.0	0.3	0.6	1.0	–	0.7	2.0	(b)
17	5	72	85	162	172	91	32	18	35	–	689	2,302	(a) Total
1.7	0.7	0.3	0.5	0.8	0.7	0.4	0.4	0.4	0.6	–	0.6	0.8	(b)
4	–	36	43	82	83	41	22	14	21	–	346	1,213	(a) Persons referred by general practitioners
1.6	–	2.4	3.1	3.4	3.6	1.9	2.3	1.8	1.9	–	2.7	4.1	(b)
21	**5**	**108**	**128**	**244**	**255**	**132**	**54**	**32**	**56**	–	**1,035**	**3,515**	(a) **Total (all groups)**
1.7	**0.6**	**0.5**	**0.7**	**1.0**	**1.0**	**0.6**	**0.6**	**0.6**	**0.9**	–	**0.8**	**1.1**	(b)

Table C83. Mass miniature radiography, (a) numbers, (b) rates per 1,000 examinations, of non-tuberculous conditions diagnosed following examination, by sex and age, 1965, England and Wales

Category of person		Males												Females												Persons
		Under 14	14	15-	20-	25-	35-	45-	55-	60-	65 and over	Not stated	All ages	Under 14	14	15-	20-	25-	35-	45-	55-	60-	65 and over	Not stated	All Ages	All Ages
Malignant neoplasms																										
All groups, *excluding* persons referred by general practitioners	(a)	–	–	1	6	5	45	204	235	243	359	–	1,098	–	–	2	3	4	23	53	32	43	66	–	226	1,324
	(b)	–	–	0.0	0.0	0.0	0.1	0.6	1.8	2.6	5.9	–	0.6	–	–	0.0	0.0	0.0	0.1	0.3	0.4	0.9	1.2	–	0.2	0.4
Persons referred by general practitioners	(a)	1	–	3	6	13	72	302	352	450	685	–	1,894	1	–	–	–	5	22	84	56	58	113	–	338	2,232
	(b)	0.3	–	0.2	0.4	0.5	2.5	10.6	23.9	34.4	43.0	–	11.6	0.4	–	–	–	0.2	0.9	3.9	5.6	7.6	10.1	–	2.6	7.6
Total (all groups)	(a)	**1**	**–**	**4**	**12**	**18**	**117**	**506**	**587**	**703**	**1,044**	**–**	**2,992**	**1**	**–**	**2**	**3**	**9**	**45**	**137**	**87**	**101**	**179**	**–**	**564**	**3,556**
	(b)	**0.1**	**–**	**0.0**	**0.1**	**0.0**	**0.3**	**1.4**	**4.0**	**6.6**	**13.7**	**–**	**1.6**	**0.1**	**–**	**0.0**	**0.0**	**0.0**	**0.2**	**0.6**	**1.0**	**1.9**	**2.7**	**–**	**0.4**	**1.1**
Non-malignant neoplasms																										
All groups, *excluding* persons referred by general practitioners	(a)	1	–	8	6	23	41	56	32	27	41	–	235	–	–	4	7	7	37	68	49	40	57	–	269	504
	(b)	0.1	–	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.7	–	0.1	–	–	0.0	0.0	0.0	0.2	0.3	0.6	0.9	1.0	–	0.2	0.2
Persons referred by general practitioners	(a)	2	–	–	2	2	5	11	7	9	20	–	58	1	–	–	–	5	2	14	12	6	21	–	61	119
	(b)	0.7	–	–	0.1	0.1	0.2	0.4	0.5	0.7	1.3	–	0.4	0.4	–	–	–	0.2	0.1	0.7	1.2	0.8	1.9	–	0.5	0.4
Total (all groups)	(a)	**3**	**–**	**8**	**8**	**25**	**46**	**67**	**39**	**36**	**61**	**–**	**293**	**1**	**–**	**4**	**7**	**12**	**39**	**82**	**61**	**46**	**78**	**–**	**330**	**623**
	(b)	**0.2**	**–**	**0.0**	**0.0**	**0.1**	**0.1**	**0.2**	**0.3**	**0.3**	**0.8**	**–**	**0.2**	**0.1**	**–**	**0.0**	**0.0**	**0.1**	**0.1**	**0.4**	**0.7**	**0.9**	**1.2**	**–**	**0.2**	**0.2**
Lymphadenopathies, excluding sarcoids																										
All groups, *excluding* persons referred by general practitioners	(a)	1	2	1	5	6	4	2	–	2	2	–	25	–	–	2	3	8	5	5	–	1	–	–	24	49
	(b)	0.1	0.2	0.0	0.0	0.0	0.0	0.0	–	0.0	0.0	–	0.0	–	–	0.0	0.0	0.0	0.0	0.0	–	0.0	–	–	0.0	0.0
Persons referred by general practitioners	(a)	1	1	2	1	4	1	2	1	2	2	–	17	1	–	1	1	4	3	2	1	–	2	–	15	32
	(b)	0.3	0.9	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.1	–	0.1	0.4	–	0.1	0.1	0.2	0.1	0.1	0.1	–	0.2	–	0.1	0.1
Total (all groups)	(a)	**2**	**3**	**3**	**6**	**10**	**5**	**4**	**1**	**4**	**4**	**–**	**42**	**1**	**–**	**3**	**4**	**12**	**8**	**7**	**1**	**1**	**2**	**–**	**39**	**81**
	(b)	**0.2**	**0.3**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**–**	**0.0**	**0.1**	**–**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**–**	**0.0**	**0.0**
Sarcoids, including enlarged hilar glands																										
All groups, *excluding* person referred by general practitioners	(a)	2	–	5	54	141	47	27	5	7	3	–	291	2	–	10	48	84	51	46	12	6	3	–	262	553
	(b)	0.2	–	0.0	0.3	0.4	0.1	0.1	0.0	0.1	0.0	–	0.2	0.2	–	0.0	0.3	0.4	0.2	0.2	0.2	0.1	0.1	–	0.2	0.2
Persons referred by general practitioners	(a)	2	–	–	13	48	20	6	5	2	2	–	98	–	–	5	19	52	24	21	8	4	3	–	136	234
	(b)	0.7	–	–	0.8	1.7	0.7	0.2	0.3	0.1	0.1	–	0.6	–	–	0.3	1.4	2.2	1.0	1.0	0.8	0.5	0.3	–	1.0	0.8
Total (all groups)	(a)	**4**	**–**	**5**	**67**	**189**	**67**	**33**	**10**	**9**	**5**	**–**	**389**	**2**	**–**	**15**	**67**	**136**	**75**	**67**	**20**	**10**	**6**	**–**	**398**	**787**
	(b)	**0.3**	**–**	**0.0**	**0.3**	**0.5**	**0.2**	**0.1**	**0.1**	**0.1**	**0.1**	**–**	**0.2**	**0.2**	**–**	**0.1**	**0.4**	**0.6**	**0.3**	**0.3**	**0.2**	**0.2**	**0.1**	**–**	**0.3**	**0.2**

Congenital cardiac abnormalities and abnormalities of the vascular system

All groups, *excluding* persons referred by general practitioners	(a)	7	3	29	33	46	27	27	16	9	10	–	207	15	3	57	29	25	20	24	14	13	12	–	212	419
	(b)	0.7	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	–	0.1	1.5	0.4	0.3	0.2	0.1	0.1	0.1	0.2	0.3	0.2	–	0.2	0.1
Persons referred by general practitioners	(a)	1	2	7	8	9	17	14	6	3	8	–	75	2	–	3	6	11	5	7	4	1	4	–	43	118
	(b)	0.3	1.8	0.5	0.5	0.3	0.6	0.5	0.4	0.2	0.5	–	0.5	0.8	–	0.2	0.4	0.5	0.2	0.3	0.4	0.1	0.4	–	0.3	0.4
Total (all groups)	**(a)**	**8**	**5**	**36**	**41**	**55**	**44**	**41**	**22**	**12**	**18**	**–**	**282**	**17**	**3**	**60**	**35**	**36**	**25**	**31**	**18**	**14**	**16**	**–**	**255**	**537**
	(b)	**0.6**	**0.5**	**0.2**	**0.2**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**–**	**0.1**	**1.4**	**0.4**	**0.3**	**0.2**	**0.2**	**0.1**	**0.1**	**0.2**	**0.3**	**0.2**	**–**	**0.2**	**0.2**

Acquired cardiac abnormalities and abnormalities of the vascular system

All groups, *excluding* persons referred by general practitioners	(a)	4	1	34	30	112	199	449	452	432	660	1	2,374	4	1	45	46	103	243	524	399	328	786	3	2,482	4,856
	(b)	0.4	0.1	0.2	0.2	0.3	0.5	1.4	3.4	4.6	10.9	8.3	1.4	0.4	0.1	0.2	0.3	0.5	1.0	2.6	5.2	7.2	14.4	30.0	2.0	1.6
Persons referred by general practitioners	(a)	1	–	7	13	44	79	219	236	336	635	–	1,570	4	–	11	15	49	102	218	206	306	776	–	1,687	3,257
	(b)	0.3	–	0.5	0.8	1.5	2.7	7.7	16.1	25.1	39.9	–	9.6	1.6	–	0.7	1.1	2.0	4.4	10.1	21.1	39.8	69.5	–	13.0	11.1
Total (all groups)	**(a)**	**5**	**1**	**41**	**43**	**156**	**278**	**668**	**688**	**768**	**1,295**	**1**	**3,944**	**8**	**1**	**56**	**61**	**152**	**345**	**742**	**605**	**634**	**1,562**	**3**	**4,169**	**8,113**
	(b)	**0.4**	**0.1**	**0.2**	**0.2**	**0.4**	**0.7**	**1.9**	**4.7**	**7.2**	**16.9**	**7.7**	**2.1**	**0.6**	**0.1**	**0.2**	**0.3**	**0.6**	**1.3**	**3.3**	**7.0**	**11.9**	**23.8**	**27.3**	**3.1**	**2.5**

Pneumoconiosis without progressive massive fibrosis

All groups, *excluding* persons referred by general practitioners	(a)	–	–	–	1	9	104	225	157	163	107	–	766	–	–	–	–	–	3	16	10	4	11	–	44	810
	(b)	–	–	–	0.0	0.0	0.3	0.7	1.2	1.7	1.8	–	0.4	–	–	–	–	–	0.0	0.1	0.1	0.1	0.2	–	0.0	0.3
Persons referred by general practitioners	(a)	–	–	1	–	5	42	88	89	81	50	–	356	–	–	–	–	–	1	9	6	3	8	–	27	383
	(b)	–	–	0.1	–	0.2	1.5	3.1	6.1	6.1	3.1	–	2.2	–	–	–	–	–	0.0	0.4	0.6	0.4	0.7	–	0.2	1.3
Total (all groups)	**(a)**	**–**	**–**	**1**	**1**	**14**	**146**	**313**	**246**	**244**	**157**	**–**	**1,122**	**–**	**–**	**–**	**–**	**–**	**4**	**25**	**16**	**7**	**19**	**–**	**71**	**1,193**
	(b)	**–**	**–**	**0.0**	**0.0**	**0.0**	**0.4**	**0.9**	**1.7**	**2.3**	**2.1**	**–**	**0.6**	**–**	**–**	**–**	**–**	**–**	**0.0**	**0.1**	**0.2**	**0.1**	**0.3**	**–**	**0.1**	**0.4**

Pneumoconiosis with progressive massive fibrosis

All groups, *excluding* persons referred by general practitioners	(a)	–	–	–	–	1	1	4	13	13	22	–	54	–	–	–	–	–	–	–	–	–	–	–	–	54
	(b)	–	–	–	–	0.0	0.0	0.0	0.1	0.1	0.4	–	0.0	–	–	–	–	–	–	–	–	–	–	–	–	0.0
Persons referred by general practitioners	(a)	–	–	–	–	–	1	4	5	7	4	–	21	–	–	–	–	–	–	1	–	–	–	–	1	22
	(b)	–	–	–	–	–	0.0	0.1	0.3	0.5	0.3	–	0.1	–	–	–	–	–	–	0.0	–	–	–	–	0.0	0.1
Total (all groups)	**(a)**	**–**	**–**	**–**	**–**	**1**	**2**	**8**	**18**	**20**	**26**	**–**	**75**	**–**	**–**	**–**	**–**	**–**	**–**	**1**	**–**	**–**	**–**	**–**	**1**	**76**
	(b)	**–**	**–**	**–**	**–**	**0.0**	**0.0**	**0.0**	**0.1**	**0.2**	**0.3**	**–**	**0.0**	**–**	**–**	**–**	**–**	**–**	**–**	**0.0**	**–**	**–**	**–**	**–**	**0.0**	**0.0**

Therapeutic misadventures

Deaths due to therapeutic misadventure are, by international agreement, coded to the underlying disease for which the treatment was given. A special analysis is therefore made of those death certificates which implicate some form of therapy. The details of such deaths in 1965 are given in Tables C84 to C87, and summarised, together with comparable figures for recent years, in Table C88.

Deaths due to adverse reaction to drug or therapy totalled 235 in 1965. They are listed in Table C84 and summarised according to the treatment given in Table C87 which also gives the numbers of cases in previous years. After a check in 1963 and 1964 the general upward trend is resumed. The greatest number of deaths is associated with corticosteroid therapy. There were 50 such cases in 1965:-

Gastro-intestinal perforation or haemorrhage	24
Adrenal failure	14
Infection	6
Cushing's syndrome	2
Osteoporosis	2
Diabetes	1
Myopathy	1

The indications for steroid treatment, as deduced from the other information on the death certificates was:-

Asthma/bronchitis	10
Skin diseases	7
Rheumatoid arthritis	23
Neoplasm	3
Nephrosis	2
Other, or not known	5

There were 46 deaths due to adverse reaction to radiation, given in almost all cases for malignant disease. In the majority of cases the reaction was described as pneumonitis or fibrosis of lung.

Anti-rheumatic drugs produced fatal adverse reactions in twenty cases, the effects being:-

Bone marrow toxicity following phenylbutazone or oxyphenbutazone	18
Vomiting following indomethacin	1
Hepato-renal failure following phenylbutazone	1

Of the 48 cases of death due to bone marrow toxicity the agents responsible were:-

Phenylbutazone	16
Cytotoxic drugs	10
Chloramphenicol	5
Chlorpromazine	3
Oxyphenbutazone	2
Radiation	2
Acetozolamide	1
Carbimazole	1
Chlorpropamide	1
Chlortetracycline	1
Methyltestosterone	1
Promazine	1
Tetracycline	1
Unknown	3

Of the 215 fatal therapeutic misadventures due to overdose of drug in 1965 (Table B), 183 (85 per cent) were due to overdose with barbiturates and other hypnotic drugs. 141 (66 per cent) were due to barbiturates alone, 31 (14 per cent) barbiturate with other drugs, 7 (3 per cent) non-barbiturate hypnotics, and 4 (2 per cent) were due to overdose of hypnotics of unstated type.

Table C84. Fatal therapeutic misadventures due to adverse reaction to drug or therapy, 1965, England and Wales

Drug or therapy	No. of Cases	Adverse reaction	Complicating condition if different from the preceding column
Aminophylline	1	Anaphylaxis	———
Anaesthesia	9		
(Brietal sodium, nitrous oxide, succinylcholine and phenergan).	1	Pulmonary oedema and anoxia	Asthmatic. Anaesthesia for dental extraction
(Omnopon, scopolamine, thiopentone, succinylcholine, nitrous oxide, oxygen and halothane).	1	Vagal reflex inhibitions	Throat infection. Tumour of pharynx
Unspecified	7		
	1	Acute pulmonary oedema	Anaesthesia for electro-convulsive therapy Coronary fibrosis and bronchiectasis Coronary atheroma
	1	Anoxia	Pulmonary haemorrhage. Aortic regurgitation due to congenital bicuspid valve
	1	Circulatory arrest	Cerebral damage. Anoxia. Vaginal prolapse
	1	Massive collapse of lung	———
	1	Myocardial failure	———
	1	Respiratory failure	Asthma. Fibrosis of lung. Pulmonary tuberculosis healed. Hysterectomy
	1	Sudden cardiac arrest	Abnormal response to apprehension
Antibiotics	2		
	1	Intestinal monilithiasis	Intestinal infection
	1	Multiple infarctions	Bacteraemia
Anticoagulant	12		
	1	Cerebellar haemorrhage	Coronary artery disease
	1	Cerebral haemorrhage	Myocardial infarction
	1	Cerebral haemorrhage	Coronary thrombosis. Essential hypertension
	1	Congestive cardiac failure: haemopericardium	Bronchopneumonia. Chronic bronchitis and emphysema
	1	Gastro-intestinal haemorrhage	Pulmonary infarction
	1	Haemopericardium	Thrombo-embotic pulmonary infarction
	1	Haematemesis	Acute pulmonary embolism
	1	Haemorrhage	Generalised thrombotic arteriosclerosis
	1	Haemorrhage into heart muscles and lungs	Cardiac failure. Pulmonary embolism
	1	Haemorrhage from atheromatous ulcer of common iliac artery	Pulmonary embolism

Table C84 - *(continued)*

Drug or therapy	No. of Cases	Adverse reaction	Complicating condition if different from the preceding column
Anticoagulant - *(continued)*			
	1	Retro-peritoneal haemorrhage	Acute renal failure
	1	Subdural haematoma	Cardiomyopathy
Arsenic	1	Toxic hepatitis	Cirrhosis of liver. Peptic ulcer. Syphilis
Aspirin	3		
	1	Acute haemorrhage from stomach	Rheumatoid arthritis
	1	Gastric erosion	Haematemesis and melaena. Peptic ulceration
	1	Haematemesis. Gastric ulcer	Toxaemia. Hypostatic pneumonia
Betamethasone	1	Adrenal cortical atrophy	Bronchopneumonia. Asthma
Biligrafin	1	Acute peripheral vascular failure	Hypertensive heart disease. Sub-hepatic abscess and gastric ulcer
Butazolidin	12		
	1	Agranulocytosis	———
	1	Agranulocytosis	Coronary thrombosis. Rheumatoid arthritis
	1	Agranulocytosis	Senile dementia. Rheumatoid arthritis
	1	Aplastic anaemia	———
	1	Aplastic anaemia	Arthritis
	1	Aplastic anaemia	Alimentary haemorrhage
	1	Aplastic anaemia	Bronchopneumonia. Rheumatoid arthritis
	1	Aplastic anaemia	Cerebral haemorrhage. Chronic osteoarthritis
	1	Aplastic anaemia	Multiple haemorrhage. Rheumatoid arthritis
	1	Aplastic anaemia	Pulmonary oedema. Osteoarthritis
	1	Pancytopenia	Bronchopneumonia
	1	Thrombocytopenic purpura	Terminal cerebrovascular accident. Gastro-intestinal and urinary tract haemorrhage
Carbrital and Fentazin	1	Anaphylaxis	Myocardial failure
Chemotherapy	3		
	1	Gastro-intestinal haemorrhage	Chorionepithelioma
	2	Septicaemia	Chorionepithelioma

Table C84 - *(continued)*

Drug or therapy	No. of Cases	Adverse reaction	Complicating condition if different from the preceding column
Chloramphenicol	5		
	1	Agranulocytosis	Secondary carcinomatosis. Pneumonia
	1	Agranulocytosis	Septicaemia. Chronic pyelonephritis
	1	Aplastic anaemia	Bronchopneumonia. Urinary infection
	1	Aplastic anaemia	Gastro-intestinal haemorrhage. Bronchitis
	1	Aplastic anaemia	Peritonitis. Paratyphoid
Chlorpromazine	5		
	1	Agranulocytosis	Bronchopneumonia. Schizophrenia
	1	Cholangiostatic hepatitis	———
	1	Extra pyramidial lesions	———
	1	Jaundice	Confluent bronchopneumonia. Liver disease
	1	Jaundice	Senile agitation
Chlorpropamide	1	Aplastic anaemia	Cerebral haemorrhage. Diabetes
Chlortetracycline	1	Aplastic anaemia	Bronchopneumonia. Chest infection
Contrast medium	1	Anaphylactic shock	Gall bladder stones. Myocardial degeneration
Coramine	1	Coma	Bronchopneumonia
Corticosteroids	3		
	1	Adreno-cortical atrophy	Bronchopneumonia. Diffuse Luprus erythematous
	1	Gastritis. Haematemesis	Rheumatoid arthritis
	1	Perforated duodenal ulcer	Chronic bronchitis
Cortisone	7		
	1	Acute adrenal insufficiency	Acute primary failure of heart. Lymphosarcoma treated by deep X-ray
	1	Bleeding peptic ulcer	Hypostatic bronchopneumonia. Steven Johnson syndrome
	1	Gastric ulcer	Gastric haemorrhage. Chronic bronchial asthma
	1	Intestinal haemorrhage	Uncontrollable senile pruritis. Congestive cardiac failure
	1	Perforated gastric ulcer	Bronchopneumonia and hepatorenal failure. Rheumatoid arthritis
	1	Suprarenal atrophy	Asthma
	1	Suprarenal insufficiency	Asthma

Table C84. - *(continued)*

Drug or therapy	No. of Cases	Adverse reaction	Complicating condition if different from the preceding column
Cyclophosphamide	1	Haemorrhage into lungs and peritoneum	Cancer of ovary
Cytotoxic drug	1	Aplastic anaemia	Carcinoma of left breast
Diamox	1	Depression of bone marrow	Myocardial infarction. Chronic glaucoma
Diathermy	1	Necrosis with perforation of transitional cell tumour of bladder	Generalised peritonitis. Essential hypertension
Dindevan	4		
	1	Acute haemorrhage	Deep vein thrombosis
	1	Haematemesis	Left subclavian embolism
	1	Intoxication	Haemorrhage. Myocardial Infarction
	1	Retro-peritoneal haemorrhage	Hypoprothrombinaemia
Diphtheria antitoxin	1	Anaphylactic shock	Streptococcal tonsillitis
Electrical treatment	1	Cerebral haemorrhage	Psychopathic state
Electro coagulation	1	Cerebral haemorrhage	Parkinson's disease
Electro-convulsive therapy	2		
	1	Pulmonary collapse	Schizophrenia
	1	Respiratory depression	Depressive illness
Electropexy	1	Reflex cardiac arrest	Raised intracranial pressure
Emetine	1	Cardiomypathy and heart failure	Alcoholism
Endoxana	1	Agranulocytosis	Gross cachexia and wasting. Carcinoma of gastro-intestinal tract
Epanutin	1	Megaloblastic anaemia	Congestive cardiac failure. Epilepsy
Epodyl	1	Pleural shock following installation	Carcinomatosis. Primary carcinoma of right breast. Old radical mastectomy
Gamma Globulin	1	Anaphylaxis	Hypogammaglobulin anaemia
Haemocoagulation	1	Haemorrhage at site of treatment	Parkinson's disease
Heparin	2		
	1	Haemorrhage	Renal failure (acute). Operation
	1	Ulcer	Haemorrhage from duodenum. Aortic and right iliac thrombosis

Table C84 - *(continued)*

Drug or therapy	No. of Cases	Adverse reaction	Complicating condition if different from the preceding column
Imuran	1	Agranulocytosis	Bronchopneumonia. Ulcerative colitis
Indocid	1	Vomiting	Cerebral thrombosis. Rheumatoid arthritis
Insulin	5		
	1	Coma	Cirrhosis of liver. Diabetes mellitus
	1	Hypoglycaemia	———
	1	Hypoglycaemia	Acute ventricular failure. Fatty degeneration of heart
	1	Hypoglycaemia	Cerebral arteriosclerosis
	1	Hypoglycaemic coma	Bronchopneumonia. Diabetes Mellitus
Largactil	4		
	1	Agranulocytic anaemia	Bilateral bronchopneumonia. Severe sub-normality
	1	Agranulocytosis	Acute pyelonephritis. Stag horn calculus
	1	Jaundice	Subdural haemorrhage. Hypertension
	1	Necrosis of liver	Bronchopneumonia
Melphalan	2		
	1	Aplastic anaemia	Multiple myelomatosis
	1	Pancytopenia	Melanoma of larynx
Methotrexate	2		
	1	Agranulocytosis	Bronchopneumonia. Psoriasis
	1	Pancytopenia	Carcinoma of left lung. Secondary deposits
Methyltestosterone	1	Aplastic anaemia	Myelosclerosis
Nardil and chlorpromazine	1	Acute liver necrosis	———
Neo-Mercazole	1	Purpura. Pancytopenia	Haemorrhagic pneumonia. Thyrotoxicosis
Penicillin	3		
	1	Acute penicillin reaction	Suppurative cervical lymphadenitis
	1	Anaphylactic shock	———
	1	Respiratory failure	Meningitis. Carcinoma of rectum
Phenacetin	5		
	1	Chronic pyelonephritis	Renal failure
	1	Necrosis of renal papillae	Uraemia
	1	Nephritis	Uraemia. Coronary thrombosis
	1	Nephropathy	Chronic renal failure
	1	Nephropathy	Uraemia. Malignant hypertension

Table C84 - *(continued)*

Drug or therapy	No. of Cases	Adverse reaction	Complicating condition if different from the preceding column
Phenoxybenzamine	1	Pulmonary oedema	Lymphosarcoma
Phenylbutazone	5		
	1	Aplastic anaemia	———
	1	Aplastic anaemia	Arthritis
	1	Aplastic anaemia	Rheumatoid arthritis
	1	Aplastic anaemia	Rheumatic pains
	1	Hepato-renal failure	Chronic hepatitis. Osteoarthritis
Phenytoin sodium and phenobarbitone	1	Toxic epidermal necrolysis	Epilepsy due to cerebral abscess
Prednisolone	1	Haematemesis and melaena	Asphyxia due to inhalation of blood into lungs. Carcinoma of breast with metastases in spine
Prednisone	4		
	1	Adrenal insufficiency	Acute asthma
	1	Gastric ulcer	Gastro-intestinal haemorrhage. Pemphigus
	1	Gastric ulceration	Gastro-intestinal haemorrhage. Acute myeloid leukaemia
	1	Haemorrhage from gastro-intestinal tract	Asthma
Potassium sulphide	1	Shock following injection	Overdose of iron tablets
Radiation	46		
Radioactive gold	1	Dermatitis	Bronchopneumonia. Myxoedema
Radiotherapy	9		
	1	Adhesions	Acute intestinal obstruction. Carcinoma of cervix and right ovary
	1	Fibrosis of lung	Respiratory failure. Carcinoma of breast
	1	Fistulae	Acute endocarditis. Carcinoma body of uterus
	1	Interstitial pulmonary fibrosis	Cor pulmonale. Carcinoma of breast
	1	Necrosis and fibrosis	Peritonitis. Carcinoma of cervix
	1	Pulmonary fibrosis	Bronchopneumonia. Thymoma
	1	Pulmonary fibrosis	Congestive cardiac failure. Cancer of breast
	1	Urinary faecal fistulae	Carcinoma of ovary
	1	Urinary tract infection	Pulmonary embolus. Carcinoma of bladder
Deep X-ray	2		
	1	Bilateral pyelonephritis	Hydronephrosis. Cerebral softening due to atheroma
	1	Fibrosis	Respiratory insufficiency. Carcinoma of oesophagus

Table C84 - *(continued)*

Drug or therapy	No. of Cases	Adverse reaction	Complicating condition if different from the preceding column
Radiation - *(continued)*			
Unspecified radiation	34		
	1	Cachexia	Carcinoma of bladder. Hepatic metastases
	1	Fibrosis	Intestinal obstruction. Lymphosarcoma
	1	Fibrosis	Peritonitis. Teratoma of testis
	1	Fibrosis	Pneumonia. Carcinoma of tonsil
	1	Fibrosis of lung	Inoperable carcinoma of breast
	1	Fibrosis of lung	Acute pulmonary oedema. Carcinoma of left breast
	1	Fibrosis of lung	Bronchopneumonia
	1	Fibrosis of lung	Carcinomatosis. Primary carcinoma of right breast
	1	Fibrosis of lung	Congestive cardiac failure. Chronic bronchitis
	1	Fibrosis of lung	Emphysema. Carcinoma of right lower lobe
	1	Fibrosis of lung	Oesophageal obstruction. Carcinoma of breast
	1	Fibrosis, upper mediastinum	Bronchopneumonia. Carcinomatosis
	1	Hypothermia	Myxoedema coma
	1	Leucopenia	Bronchopneumonia. Carcinoma of pelvis
	1	Lymphoedema	Lymphangio-sarcoma
	1	Marrow damage	Bronchopneumonia. Hodgkin's disease
	1	Myelitis	Bronchopneumonia
	1	Necrosis	Intestinal fistula. Teratoma of testis
	1	Necrosis	Peritonitis. Carcinoma of cervix
	1	Necrosis of bladder	Utero-vesical fistula. Carcinoma of cervix
	1	Necrosis of brain	Acute bilateral broncho-pneumonia. Meningioma
	1	Necrosis of right axilla	Gangrene of right arm. Carcinoma of breast with metastases
	1	Nephritis	Bronchopneumonia. Renal failure. Cancer of oesophagus
	1	Pneumonitis	Asthma. Carcinoma of left breast
	1	Pneumonitis	Bronchopneumonia. Carcinoma of pyriform with secondaries
	1	Pneumonitis	Cardiac arrest: Carcinoma of breast and prostate
	1	Pneumonitis	Myocardial infarction. Carcinoma of larynx

Table C84 - *(continued)*

Drug or therapy	No. of Cases	Adverse reaction	Complicating condition if different from the preceding column
Radiation - *(continued)*			
Unspecified radiation - *(continued)*	1	Pneumonitis	Pneumonia. Lymphosarcoma
	1	Pneumonitis	Carcinoma of breast with secondary of lung
	1	Pulmonary fibrosis	Bronchopneumonia. Carcinoma of breast
	1	Pulmonary fibrosis	Congestive cardiac failure. Thyrotoxicosis
	1	Pulmonary fibrosis	Mediastinal neoplasm. Carcinoma of breast
	1	Pulmonary fibrosis	Pneumonia. Carcinoma of breast. Carcinomatosis
	1	Proctitis	Metastatic carcinoma. Carcinoma of prostate with metastases
Salicylate	1	Haematemesis and melaena	Coronary thrombosis
Nalidixic acid, nitrofurantoin and indomethacin	1	Subacute yellow atrophy	Rheumatoid arthritis. Cystitis
Steroids	33		
	1	Acute adrenal apoplexy	Still's disease
	1	Adreno-cortical failure	
	1	Adrenal collapse	Rheumatoid arthritis
	1	Adrenal failure	Bronchopneumonia. Chronic rheumatoid arthritis
	1	Adrenal failure	Pneumonia
	1	Adrenal insufficiency	Perforation of duodenal ulcer. Arthritis
	1	Bleeding duodenal ulcer	Paralytic ileus. Respiratory failure
	1	Bleeding peptic ulcer	Bronchopneumonia. Chronic bronchitis and emphysema
	1	Bleeding peptic ulcer	Shock. Rheumatoid arthritis
	1	Bronchopneumonia	Exfoilative dermatitis
	1	Cushingoid state	Cardiac failure. Arthritis
	1	Cushing's syndrome	Bronchopneumonia. Rheumatoid arthritis
	1	Diabetes	Bronchopneumonia. Rheumatoid arthritis
	1	Fulminating bronchopneumonia	Pemphigoid
	1	Gastric ulceration	Acute intestinal haemorrhage
	1	Haematemesis	Bronchopneumonia. Severe rheumatoid arthritis
	1	Haematemesis	Nephrotic syndrome
	1	Haematemesis and melaena	Rheumatic arthritis
	1	Hypostatic pneumonia	Polymyalgia rheumatica
	1	Intestinal perforation	Peritonitis. Asthma
	1	Large gastro-intestinal haemorrhage	Cerebral thrombosis. Rheumatoid arthritis
	1	Numerous septic sinuses	Septicaemia. Severe chronic rheumatoid arthritis
	1	Osteoporosis	Fat embolism. Rheumatoid arthritis

Table C84 - *(continued)*

Drug or therapy	No. of Cases	Adverse reaction	Complicating condition if different from the preceding column
Steroids - *(continued)*			
	1	Osteoporosis	Pericarditis. Rheumatoid arthritis
	1	Perforated duodenal ulcer	Peritonitis. Rheumatoid arthritis
	1	Perforated peptic ulcer	Rheumatoid arthritis
	1	Perforated peptic ulcer	Type II nephritis
	1	Perforated peptic ulcer	Rheumatoid arthritis. Bronchitis
	1	Septicaemia	Splenic abscess. Rheumatoid Arthritis
	1	Staphylococcal arthritis	Pericarditis. Rheumatoid arthritis
	1	Suprarenal atrophy	Chronic asthma
	1	Suprarenal gland failure	Acute renal failure. Pustular psoriasis
	1	Ulceration	Haematemesis and melaena. Rheumatoid arthritis
Sparine	1	Agranulocytosis	Hypostatic pneumonia. Senile dementia
Tenderil	2		
	1	Agranulocytosis	Osteoarthritis
	1	Aplastic anaemia	Septicaemia. Ureteritis
Tetracycline	2		
	1	Infected generalised dermatitis	Chronic rheumatoid arthritis
	1	Thrombocytopenic purpura	Subdural and subarachnoid haemorrhage. Chest complaint
Thiotepa	2		
	1	Agranulocytosis	Staphylococcal septicaemia. Bladder growth
	1	Toxic damage to bone marrow	Bronchopneumonia. Myxoma peritonei
Transfusion	10		
	1	Hepato-renal failure. Incompatibility blood transfusion	Acute bladder necrosis. Operation for carcinoma of cervix
	1	Aplastic anaemia	Generalised carcinomatosis
	1	Circulatory failure	Blood loss during operation for malignant extradural spinal tumour
	1	Haematuria from carcinoma of bladder	Bronchopneumonia and urinary infection
	1	Afibrinogenaemia. Incompatibility transfusion	Haemorrhage during lobectomy
	1	Haemosiderosis	Pneumonia. Aplastic anaemia
	1	Serum hepatitis	Sideroblastic anaemia
	1	Severe hepatitis	Liver failure. Massive haemorrhage from gastric ulcer.

Table C84 - *(continued)*

Drug or therapy	No. of Cases	Adverse reaction	Complicating condition if different from the preceding column
Transfusion - *(continued)*			
	1	Serum hepatitis	Cholaemia (Inquest held - transfusion presumed)
	1	Toxaemia	Anaemia
Triamcinolone	1	Myopathy	Acute left ventricular failure. Auricular fibrillation. Advanced cachexia
Urografin	1	Shock following injection	Aortic stenosis. Myasthenia gravis
OTHER DRUGS AND THERAPY			
Drug unknown	4		
	1	Granulopenia	Purulent meningitis. Coronary thrombosis
	1	Marrow depression	Lobar pneumonia. Drug idiosyncracy. Rheumatoid arthritis
	1	Respiratory failure	Cerebral abscess. Hodgkin's disease
	1	Very low haemoglobin anaemia and leucopenia	Anoxia and heart failure. Cancer body of uterus
Total	**235**		

Table C85. Fatal therapeutic misadventures due to overdose of drug, 1965, England and Wales

Drug or combination of drugs	Cases			Drug or combination of drugs	Cases		
	Medically administered	Self administered	Administration not stated		Medically administered	Self administered	Administration not stated
Amylobarbitone	-	-	3	Palfium	-	-	1
Amylobarbitone and alcohol	-	1	-	Pentobarbitone	-	1	1
Amytal	-	-	6	Pentobarbitone and Nembutal	-	-	1
Amytal and Seconal	-	-	1	Pethidine	-	-	1
Anaesthetic	1	-	-	Phenacetin	-	-	1
Anticoagulant	-	-	1	Phenergan, Nardil and Tofranil	-	-	1
Antihistamine	-	-	1	Phenobarbitone	-	1	3
Aspirin	-	2	3	Phenobarbitone, theophylline and ephedrine	-	-	1
Barbitone	-	1	-	Phenothiazine	-	-	1
Barbiturate	-	11	26	Quinalbarbitone and amylobarbitone	-	-	1
Barbiturate and alcohol	-	4	-	Salicylate	-	1	2
Carbrital	-	4	5	Seconal	-	3	6
Carbromal	-	-	1	Seconal and alcohol	-	2	-
Chlorpromazine	-	1	-	Seconal and barbitone	-	-	1
Chloral hydrate	-	-	1	Sodium Amytal	-	8	11
Chloral hydrate and amytal	-	1	-	Sodium Amytal and alcohol	-	1	-
Cyclobarbitone	-	-	2	Sodium Amytal and Stelazine	-	-	1
Digitalis	-	1	1	Sodium Amytal and Tricloryl	-	-	1
Digoxin	-	1	-	Sodium barbiturate	-	-	1
Disipal	-	-	1	Soneryl	-	2	3
Doriden	-	-	3	Soneryl and alcohol	-	1	-
Glutethimide	-	-	1	Soneryl and Nembutal	-	1	-
Heparin	-	-	2	Stelazine	-	-	1
Hypnotic drug n.e.c.	-	-	1	Tryptizol	-	1	-
Insulin	-	-	2	Tuinal	-	15	19
Mandrax	-	1	-	Tuinal and alcohol	-	4	-
Mersalyl	1	-	-	Tuinal and Tofranil	-	2	-
Migril	-	-	1	Sleeping tablets	-	1	-
Morphine and barbiturates	-	-	1	Sleeping tablets and alcohol	-	2	-
Narcotic	-	1	-	Not stated	-	-	1
Nembutal	-	2	10				
Nembutal and aspirin	-	-	1				
Nembutal, paraldehyde, chloral hydrate and potassium bromide	-	-	1				
Nembutal and Soneryl	-	1	-				
Orphenadrine	-	-	1	**Total**	**2**	**78**	**135**

Table C86. Fatal therapeutic misadventure due to mistake in drug administration, 1965, England and Wales

Drug	Nature of misadventure
Scoline	Inadvertently injected with saline

Table C87. Fatal therapeutic misadventures due to accident in technique, 1965, England and Wales

G.R.O. Code No.	Operation	Nature of misadventure	Notes
001-049	**Neurosurgery**		
003	Cranial puncture - 3 cases	Air embolism	Acute respiratory failure. Air embolism. Operation to relieve post-meningetic hydrocephalus under general anaesthetic of cyclopropane, oxygen, ether, nitrous oxide and halothane
		Haemorrhage	1. Intraventricular haemorrhage due to cisternal puncture 2. Epidural abscess
		Infection	Encephalitis due to infection of ventricular drainage tube inserted for hydrocephalus due to meningitis
005	Excision of intracranial lesion. - 1 case	Air embolism	Air embolism due to operation of cerebellar tumour
043	Injection into sympathetic nerve or ganglion. - 1 case	Obstruction	1(a) Myocardial infarction. (b) Coronary atheroma. Epidural anaesthetic block for lumbar sympathectomy reached subarachnoid space causing circulatory failure and collapse
070-099	**Operations on endocrine system**		
072	Thyroidectomy - 1 case	Air embolism	Air embolism. Operation of thyroidectomy. Thyrotoxicosis. Pleural adhesions. Pulmonary tuberculosis. Entry of air into veins of neck during operation
200-249	**Operations on ear, nose and throat**		
214	Excision of lesions of nose - 2 cases	Infection	Pneumococcal meningitis following operation for removal of nasal polypi and drainage of the infected antra of Highmore, the operation having been necessary and skilfully performed. Inquest held
		Inhalation of blood	Inhalation of blood following nasal polypectomy
220	Incision and drainage of paranasal sinuses - 1 case	Unspecified	Respiratory failure due to cerebral anoxia during antral wash out for sinusitis. Misadventure
231	Laryngo-pharyngectomy - 1 case	Obstruction	Asphyxia and vagal inhibition due to obstruction of plastic airway following laryngo-pharyngectomy for carcinoma of pharynx

Table C87 - *(continued)*

G.R.O. Code No.	Operation	Nature of misadventure	Notes
200–249	**Operations on ear, nose and throat** *(continued)*		
238	Laryngoscopy – 1 case	Abrasion	Death from misadventure due to abrasion of the gullet during an examination of the throat
245	Tracheotomy – 1 case	Ulcer	Haemorrhage following erosion of the innominate artery by an ulcer of the trachea following tracheotomy and prolonged decubitation for treatment of tetanus – was playing football when he received a cut on the knee and tetanus developed
250–299	**Operations on buccal cavity and oesophagus**		
262	Tonsillectomy – 1 case	Vagal inhibition	Cerebral anoxia following cardiac arrest due to vagal inhibition following tonsillectomy operation
263	Adenoidectomy – 2 cases	Obstruction	Cerebral anoxia and cardiac arrest due to partial respiratory obstruction from nasal pack required to stem haemorrhage following operation for removal of adenoids
		Inhalation of blood	Pulmonary collapse caused when deceased accidentally inhaled blood and mucus after an operation for adenoids
281	Oesophagectomy – 2 cases	Rupture	1(a) Massive pulmonary collapse. (b) Ruptured diaphragm. (c) Oesophagectomy. 2. Carcinoma of oesophagus
		Perforation	Perforation of duodenum due to oesophago-gastrectomy due to carcinoma of stomach
287	Oesophagoscopy – 3 cases	Perforation	Peripheral failure. Perforated oesophagus. Oesophagoscopy for carcinoma of oesophagus
		Perforation	(a) Right sided empyema. (b) Perforation of oesophagus during oesophagoscopy for carcinoma of oesophagus
		Tear	(1) Haemorrhage into left chest. (2) Tear of the oesophagus during oesophagoscopy. (3) Haemorrhage from gastric ulcer
288	Dilatation of oesophagus – 3 cases	Perforation	Acute heart failure due to congenital abnormalities. Operation for oesophageal perforation. Dilation of oesphagus in hospital. Rupture of wall
		Rupture	Bronchopneumonia. Ruptured oesophagus. Dilation of stricture due to hiatus hernia and reflex
		Rupture	(a) Hypostatic pneumonia following (b) operation for repair of rupture of oesophagus due to (c) surgical treatment for dilation of the oesophagus for the relief of (d) fibrous scarring consequent upon (e) carcinoma

Table C87 - *(continued)*

G.R.O. Code No.	Operation	Nature of misadventure	Notes
250–299	**Operations on buccal cavity and oesophagus** *(continued)*		
	No operation mentioned by the coroner – 3 cases	Perforation	Perforation of oesophagus. Carcinoma of oesophagus. Inquest held
		Perforation	Erosion of superior vena cava. Empyema and mediastinitis. Perforation of oesophagus. Inquest held
		Rupture	Myocardial failure. Mediastinal abscess. Rupture of oesophagus. Coronary occlusion due to atheroma. Misadventure
300–379	**Thoracic surgery**		
301	Cardiocentesis – 1 case	Haemorrhage	1(a) Haemorrhage. (b) Cardiac puncture investigation of chronic heart disease. (Had fully recovered from anaesthetic)
304	Operation on valves of heart – 4 cases	Obstruction	1(a) Coronary obstruction. (b) Operation for aortic stenosis and regurgitation. Cardiac catheter obstructed coronary circulation
		Rupture	1(a) Haemorrhage from rupture of aorta. (b) Profound arteriosclerosis during operative treatment for mitral stenosis and regurgitation
		Rupture	1(a) Massive haemorrhage due to (b) rupture of aorta during operation for replacement of aortic valve
		Tear	1(a) Shock and internal haemorrhage due to (b) tear of the heart (right ventricle) during (c) valvotomy for stenosed valve
305	Repair of congenital defect of heart – 2 cases	Air embolism	Air embolism. Fault in mechanical heart. Atrial septal defect operation
		Perforation	Haemothorax. Perforation of heart by trocar. Pneumothorax following operation for congenital aortic regurgitation
319	Other operations on heart and pericardium – 1 case	Perforation	1. Haemopericardium due to perforation of the heart due to cardiac catheterisation. 2. Chronic fibrosis of lung
331	Thoracotomy – 1 case	Tear	1(a) Haemorrhage. (b) Severance of aberrant hepatic vein. (c) Thoracotomy and congenital heart disease (atrio ventricular defect)
332	Thoracentesis – 2 cases	Air embolism	Air embolism following chest aspiration for pulmonary tuberculosis
		Unspecified	Collapse of left lung. Pneumothorax during attempted aspiration of right side of chest. Accidental death
344	Pneumonectomy – 2 cases	Tear	Haemorrhage. Pneumonectomy for carcinoma of bronchus. Veins torn from atrium in an attempt by surgeon to clear a portion of vein and atrium for division
		Displaced ligature	Intrapleural haemorrhage due to displacement of a ligature from the left main pulmonary artery following radical pneumonectomy due to cancer of left bronchus

Table C87 - *(continued)*

G.R.O. Code No.	Operation	Nature of misadventure	Notes
380-399	**Operations on breast**		
383	Mastectomy - 1 case	Air embolism	Cardiac arrest due to air embolism due to radical mastectomy for carcinoma of right breast
400-599	**Gastro-intestinal and abdominal surgery**		
400	Laparotomy - 2 cases	Stricture	Hepatic insufficiency due to obstructive jaundice due to stricture of common hepatic duct with fibrous thickening of Glisson's capsule and exploratory laparotomy with right subdiaphgramatic haematoma
		Unspecified	Acute peritonitis following laparotomy for jaundice due to chlorpromazine. Anxiety neurosis. Misadventure
404	Hernioplasty - 2 cases	Perforation	Right empyema due to perforation of oesophageal ulcer due to hiatus hernia and operation. (Laparotomy with pyloroplasty and vagotomy)
		Rupture	Ruptured oesophagus following repair of hiatus hernia
	Abdominal operation not specified - 1 case	Swab	1(a) Toxaemia. (b) Fluid and electrolytic loss. (c) Gastric fistula. (d) Foreign body in peritoneal cavity. Swab left in at operation three months previously
	No operation mentioned by coroner - 1 case	Puncture	Cirrhosis of liver accelerated by peritonitis due to puncture of small intestinal wall. Alcoholism. Inquest held
422	Gastrectomy, total - 1 case	Ruptured sutures	Rupture of suture line. Total gastrectomy. Carcinoma of stomach
423	Gastrectomy, partial - 5 cases	Infection	1. Bronchopneumonia. 2. A sub-phrenic abscess due to 3. peritonitis following 4. a partial gastrectomy for gastric ulcer. Accidental
		Infection	(a) Peripheral circulatory failure. (b) Acute enteritis (c) following operation. 2. Carcinoma of stomach
		Leakage of suture line	Septic peritonitis due to leakage of a suture line following partial gastrectomy for chronic benign gastric ulcer
		Perforation	(a) Tracheopneumonia due to (b) surgical removal of fibro-sarcoma causing perforation of stomach
		Ruptured sutures	Generalised peritonitis following rupture of the sutures at the site of operation in the stomach. Peptic ulcer. Gastrectomy
432	Gastroscopy - 1 case	Perforation	Mediastinitis following perforation of oesophagus during gastroscopy - followed by bronchial fistula. Healed gastric ulcer. Chronic pyelonephritis
452	Colectomy - 1 case	Rupture	1(a) Peritonitis. (b) Rupture of anastomosis following operation for carcinoma of colon. Long term therapy (arthritis) which affected healing after operation

Table C87 - *(continued)*

G.R.O. Code No.	Operation	Nature of misadventure	Notes
400–599	**Gastro-intestinal and abdominal surgery** *(continued)*		
457	Colostomy - 1 case	Perforation	(b) Perforation of sigmoid colon. (c) Transverse colostomy. 2. Imperforate anus
461	Closure of artificial opening into intestine - 2 cases	Shock	Acute toxic myocardial failure due to generalised peritonitis due to spontaneous perforation of a diverticulum of the descending colon accelerated by post-operative shock due to an operation for repair of the perforation and a disfunctioning transverse colon
		Sepsis	Septic portal pylophlebitis. Pelvic abscess. Abdo-anal pull through for closure of colostomy performed for recto-vesical fistula following radium for carcinoma of cervix. Pyopneumothorax
471	Proctectomy - 2 cases	Haemorrhage	Haemorrhage from traumatic aneurysm of right internal iliac artery following manipulation necessary at operation for abdomino-perineal resection of rectum necessary because of carcinoma and to stop bleeding
		Displaced tubes	Respiratory failure. Abdomino-perineal excision of rectum. Carcinoma of anal canal. Displacement of tracheostomy and endotracheal tubes and obesity
477	Reduction of prolapsed rectum - 1 case	Transfixation	Bronchopneumonia and pulmonary embolism due to transfixation of iliac vein during operation for rectal prolapse
501	Hepatectomy - 1 case	Air embolism	1(a) Air embolism. (b) Hepatectomy
502	Biopsy of liver - 2 cases	Haemorrhage	Internal haemorrhage following needle biopsy of liver
		Tear	1(a) Haemorrhage. (b) Tear in liver (biopsy done for enlarged liver). (c) Liver puncture. 2. Carcinoma of stomach
509	Other operations on liver - 1 case	Rupture	Anaphylactoid shock following rupture of hydatid cyst during surgical operation
521	Cholecystectomy and vagotomy - 1 case	Rupture	1(a) Mediastinal abscess. (b) Rupture of oesophagus. Cholecystectomy and vagotomy for gallstones
600–699	**Genito-urinary surgery**		
606	Nephrectomy - 1 case	Slipped ligature	Haemorrhage following a slipped ligature after nephrectomy for carcinoma of the kidney
607	Excision of lesion of Kidney - 1 case	Tear	Retroperitoneal haemorrhage during operation for removal of carcinoma of kidney. Coronary thrombosis due to coronary atheroma. Separation of growth from inferior vena cava and tearing of latter
614	Exploration of peri-renal tissue - 1 case	Tear	Acute left ventricular failure. Haemorrhage from operation incision. Kidney veins torn by retraction operation. Hypertensive heart disease and coronary atheroma

Table C87 - *(continued)*

G.R.O. Code No.	Operation	Nature of misadventure	Notes
600–699	**Genito-urinary surgery** *(continued)*		
659	Other operations on bladder – 1 case	Infection	Acute renal failure. Septicaemia. Fulgurisation of bladder papilloma. Chronic lymphatic leukaemia. Malignant bladder papilloma.
665	Urethrorrhaphy – 1 case	Perforation	Peritonitis perforation of bladder. Endoscopic resection of prostate. 2. Bulbous emphysema of lungs
700–759	**Gynaecological operations**		
702	Oophorectomy, partial – 2 cases	Inhalation of vomit	Asphyxia due to inhalation of vomit due to subacute intestinal obstruction aggravated by operation for ovarian cystitic intestinal obstruction
		Infection	Tetanus following operation for ovarian cyst
710	Fallopian insufflation – 1 case	Air embolism	Air embolism sustained by misadventure following a diagnostic operation for inability to conceive
719	Other operations on ovary and oviduct – 1 case	Tear	Haemorrhage and shock due to a torn iliac vein during removal of tuberculous tubo-ovarian abscess
721	Hysterectomy, sub-total – 1 case	Abrasion	(a) Peritonitis. (b) Perforated jejunum sustained as a result of bruising during an operation for sub-total hysterectomy. Prolapsed womb
722	Hysterectomy, total – 1 case	Rupture of sutures	Acute pulmonary oedema and pulmonary thrombo-embolism due to thrombophlebitis of deep vein of leg following hysterectomy suture dehiscence following hysterectomy for removal of ovarian cyst
725	Pelvic evisceration – 1 case	Perforation	Peritonitis following perforation of small intestine. Operation for removal of uterus with fibroid tumour
749	Other operations on vagina– 1 case	Incarceration	Vaginal haemorrhage. Incarcerated vaginal pessary. Myocardial degeneration. Pulmonary oedema
760–799	**Obstetric operations**		
785	Removal of retained placenta – 1 case	Air embolism	1(a) Air embolism due to (b) childbirth due to bleeding from uterus following removal of after-birth
789	Dilatation and curettage, obstetrical – 1 case	Rupture	1(a) Haemorrhage and shock (b) Rupture of uterus (c) following uterine dilatation and curettage for abortion
790	Procedures for therapeutic abortion – 1 case	Infarction	Cerebral infarction due to therapeutic abortion
900–929	**Operations on peripheral blood vessel and lymphatic system**		
909	Angiography – 1 case	Puncture	1(a) Retroperitoneal haematuria. (b) Puncture site of vertebral angiography at right femoral artery. 2(a) Myocardial infarction. (b) Cerebral atheroma

Table C87 - *(continued)*

G.R.O. Code No.	Operation	Nature of misadventure	Notes
900-929	**Operations on peripheral blood vessel and lymphatic system** *(continued)*		
910	Phlebotomy - 1 case	Obstruction	Respiratory obstruction due to surgical emphysema of the neck and upper mediastinum following puncture of internal jugular vein to obtain blood for laboratory examination
950-999	**Other surgical procedures**		
951	Transfusion of blood - 2 cases	Unspecified	1(a) Pulmonary embolus. (b) Thrombophlebitis. (c) Uraemia. Left arm transfusion
		Infection	Septicaemia and bacterial endocarditis due to (septic) thrombophlebitis. Infection of the transfusion site
952	Transfusion, plasma - 1 case	Necrosis	Liver failure due to massive necrosis of liver following blood and plasma transfusion
953	Infusion, intravenous - 1 case	Unspecified	1(a) Pulmonary embolism. Intravenous infusion. (b) Superficial vein thrombosis. Pernicious anaemia. Chronic ulcer. Carcinoma left nipple
972	Biopsy, n.e.c. - 2 cases	Haemorrhage	1(a) Haemorrhage and shock caused by (b) penetration of a branch of the pulmonary vein during the taking of a biopsy for a suspected carcinoma of bronchus
		Haemorrhage	Haemorrhage due to bronchial biopsy for unsolved pneumonia
979	Other operations with site unspecified - 1 case	Haematoma	Peri-anal and peri-renal haematoma whilst undergoing manipulation
983	Application of external supporting apparatus - 1 case	Unspecified	Right sided haemorrhagic pneumonia. Spontaneous rupture of a pressure atrophied stomach. A spastic child was placed in a plaster cast to correct his spine
999	Other surgical procedures (Barium enema) - 2 cases	Perforation	1(a) Chronic suppurative osteomyelitis of left pubic bone. (b) Pelvic abscess. Perforation of rectum during performance of barium enema for diagnosis of diverticulitis of the colon
		Perforation	Shock due to extravasation of barium from perforation of colostomy during X-ray investigation
	(Cardiac massage) - 2 cases	Compound fracture of rib	Bronchopneumonia and lung abscess. Pneumothorax and pneumoperitoneum. Fractured ribs. Cardiac massage. A tracheostomy performed on deceased and a humidifier set up to aid breathing. Later steam was seen coming from the humidifier. Acute meningitis
		Fracture of rib	Myocardial fibrosis due to coronary atheroma accelerated by fractured ribs during cardiac massage for cardiac arrest

Table C87 - *(continued)*

G.R.O. Code No.	Operation	Nature of misadventure	Notes
	Miscellaneous procedures		
	Anaesthesia - 1 case	Obstruction	1(a) Cardio-respiratory failure due to (b) bilateral pneumothorax and surgical emphysema. (c) Respiratory obstruction during anaesthesia
	Implanted electronic device - 1 case	Infection	Myocardial degeneration (fatty degeneration). Contributed to by (1) toxaemia from infection of scrotal tissues at site of electronic device wires and (2) diabetes mellitus
	Umbilical cord ligature - 1 case	Inadequate ligature	Haemorrhage from umbilical cord. Ligature of umbilical cord becomes inadequate
	Total 98		

Table C88. Therapeutic misadventures - summary, 1960 to 1965, England and Wales

Fatal misadventure due to:	Number of deaths					
	1960	1961	1962	1963	1964	1965
Adverse reaction to drug or therapy	147	188	220	181	103	235
Mistake in drug administered	1	2	-	1	1	1
Overdose of drug	117	117	157	166	101	215
Accident in technique	59	110	96	95	74	98

Table C89. Therapeutic misadventures, summary of adverse reactions to drugs and therapy, 1957 to 1965, England and Wales

Drug or therapy	1957 and 1958*	1959	1960	1961	1962	1963	1964	1965
Anaesthetic agents	10	4	-	4	1	1	2	9
Analgesics	8	1	3½	4	15½	5	4	8½
Antibiotics n.e.c.	36	12½	13	22½	19½	16½	7½	12½
Anti-cancer - leukaemia	7	3½	12	9½	18	16	4	15½
Anticoagulant	9½	13	10	20	21	16	10½	18
Anti-convulsant	4	2	2	1	2	2	-	2
Anti-rheumatic	6	4	8	5½	14	12	8	20½
Anti-tuberculosis	3	2½	½	1½	1½	-	1	-
Barbiturates and other hypnotics	3½	1	-	6½	3½	-	-	½
Corticosteroids and related drugs	11½	13	16½	28	40	25	18½	50½
Contrast media	3	2	1	3	3	-	-	3
Diuretics	4	1	3	2½	-	2	-	-
Endocrine, hormones, nutritional and metabolic agents	23	13	7	6½	8	3	-	7
Hypotensives	4½	1	½	-	1	-	-	-
Metals and compounds	9	2	2	3½	1	½	1	1
Psychiatric, tranquillisers	18	9	8½	5½	10	18	5	11½
Radiation (radio-active substances and x-rays)	42½	32	43	46	41	47	32	45½
Sulphonamides	10½	2	3	3	2½	3	1½	½
Transfusions	21	6½	7½	6	8	3	3	10
Mixed responsibility	3	-	-	2	-	-	-	1
Drug n.e.c.	7	3	-	3½	4½	1	2	8½
Drug unknown	5	-	5	1	2	1	3	4
Electro-convulsive therapy	11	8	1	3	3	6	-	3
Other procedures	5	-	-	-	-	3	-	3
Total	**265**	**136**	**147**	**188**	**220**	**181**	**103**	**235**

Note. If two drugs or other forms of therapeutic misadventure are reported as being jointly responsible for the immediate causation of death, each is counted as one half in assessing comparative results.

* Combined total for two years.

UNITED KINGDOM

Vital Statistics

The vital statistics of the United Kingdom was commented upon in the *Registrar General's Statistical Review* for 1962. For the sake of convenience the figures given have been brought up to date as follows:-

Table C90. Vital Statistics : 1938 and 1946 to 1965, United Kingdom

	Year		United Kingdom	England	Wales	Scotland	Northern Ireland
Estimated mid-year home population (in thousands)	1965	P	54,436	45,070	2,693	5,204	1,469
		M	26,441	21,909	1,318	2,497	716
		F	27,995	23,161	1,375	2,707	753
Marriages	1965		422,054	351,107	20,020	40,475	10,452
Live births[1]			997,275	816,433	46,292	100,660	33,890
Deaths			627,798	516,317	33,062	62,868	15,551
Deaths of infants under 1 year of age			19,571	15,455	940	2,327	849
Persons marrying, rates per 1,000 living	1938		17.2	17.6	16.2	15.5	13.4
	1946-50		17.5	17.7	17.4	16.9	13.9
	1951-55		15.9	15.9	15.7	16.3	13.5
	1956-60		15.3	15.3	15.0	16.2	13.5
	1961-65		15.1	15.1	14.8	15.5	14.1
	1965		15.5	15.6	14.9	15.6	14.2
Live births, rates[2] per 1,000 living	1938		15.5	15.1	15.3	17.7	20.0
	1946-50		18.3	18.0	17.9	19.8	22.0
	1951-55		15.7	15.3	15.7	17.9	20.8
	1956-60		16.8	16.4	16.2	19.2	21.7
	1961-65		18.3	18.1	17.4	19.7	23.0
	1965		18.3	18.1	17.2	19.3	23.1
Death rates[4] per 1,000 living	1931-38[3]		12.2	12.0	12.9	13.2	14.4
	1946-50		11.6	11.4	12.6	12.3	11.8
	1951-55		11.7	11.3	12.7	12.1	11.3
	1956-60		11.6	11.5	12.4	12.0	10.8
	1961-65		11.8	11.7	12.6	12.2	10.8
	1965		11.5	11.5	12.3	12.1	10.6

Table C90 – *(continued)*

	Year	United Kingdom	England	Wales	Scotland	Northern Ireland
Infant mortality rates (5) (under 1 year) per 1,000 live births	1938	56	53	57	70	75
	1946–50	38	36	42	47	48
	1951–55	28	27	33	33	37
	1956–60	23	22	27	28	28
	1961–65	21	21	24	25	26
	1965	20	19	20	23	25

(1) England and Wales. Remainder: registrations.

(2) The marriage and birth rates for 1938 and from 1951 are based on home population, but the 1946–50 aggregates are based on total population.

(3) Here the 1931–38 aggregate is given, since crude death rates in the year 1938 were rather lower than in adjacent years.

(4) The death rates are based on total deaths and home populations, except that the 1946–49 element in the 1946–50 aggregate is based on civilian deaths and civilian populations.

(5) England and Wales: for 1957 onwards based on deaths per thousand live birth occurrences; for earlier years based on deaths per thousand related live births. Remainder: based on deaths per thousand births registered.

FERTILITY RATES BY BIRTH ORDER, ENGLAND AND WALES

Live births per woman married once only at integral marriage durations irrespective of parity

Note - Figures are rounded and may not add to totals

1964-65

Calendar year of marriage	Marriage duration in completed years	Age at marriage																					
		All ages under 45						Under 20						20-24						25-29					
		Number of previous children																					
		Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more
1964	0	.350	.337	.010	.002	.001	.001	.507	.497	.010	.000	.000	.000	.286	.275	.009	.002	.000	.000	.286	.260	.016	.005	.003	.002
1963	1	.301	.215	.080	.005	.001	.001	.331	.194	.133	.004	.000	.000	.294	.231	.058	.004	.001	.000	.300	.233	.055	.007	.003	.002
1962	2	.284	.118	.143	.019	.002	.001	.312	.093	.188	.030	.002	.000	.283	.138	.128	.015	.002	.001	.279	.128	.127	.017	.004	.003
1961	3	.251	.071	.132	.042	.006	.002	.290	.054	.157	.070	.008	.001	.277	.092	.144	.035	.004	.001	.258	.081	.132	.035	.006	.004
1960	4	.240	.051	.115	.057	.014	.003	.258	.035	.114	.082	.024	.003	.250	.062	.124	.050	.011	.002	.224	.050	.108	.048	.012	.005
1959	5	.204	.035	.087	.055	.020	.007	.218	.025	.080	.070	.033	.010	.215	.042	.098	.054	.016	.005	.192	.035	.084	.049	.016	.008
1958	6	.185	.025	.069	.055	.024	.011	.194	.018	.058	.064	.036	.018	.180	.028	.073	.051	.019	.008	.159	.024	.062	.045	.018	.010
1957	7	.141	.016	.047	.043	.022	.014	.164	.012	.042	.052	.034	.024	.150	.020	.055	.045	.020	.010	.129	.016	.043	.040	.018	.012
1956	8	.119	.011	.034	.036	.021	.016	.143	.008	.032	.043	.032	.028	.126	.014	.041	.038	.020	.013	.105	.011	.032	.032	.017	.014
1955	9	.095	.008	.024	.029	.018	.017	.123	.006	.022	.036	.028	.030	.100	.009	.028	.031	.017	.014	.082	.008	.022	.023	.015	.013
1954	10	.084	.006	.019	.025	.017	.017	.115	.006	.019	.030	.027	.033	.089	.008	.022	.027	.017	.016	.065	.007	.015	.020	.012	.011
1953	11	.067	.005	.014	.019	.014	.016	.101	.005	.014	.025	.023	.034	.071	.005	.016	.021	.014	.015	.050	.005	.010	.014	.010	.011
1952	12	.056	.003	.010	.015	.012	.016	.089	.003	.011	.021	.020	.033	.062	.004	.012	.017	.013	.015	.036	.003	.007	.010	.007	.009
1951	13	.046	.003	.008	.012	.010	.014	.076	.002	.009	.017	.018	.030	.051	.003	.009	.014	.011	.014	.025	.002	.005	.006	.005	.007
1950	14	.040	.002	.005	.010	.009	.015	.073	.002	.007	.014	.016	.034	.044	.002	.007	.012	.009	.014	.020	.001	.003	.005	.004	.007
1949	15	.032	.001	.004	.007	.007	.013	.058	.001	.005	.011	.012	.029	.035	.002	.005	.008	.008	.013	.014	.001	.002	.003	.003	.005
1948	16	.026	.001	.003	.005	.005	.012	.055	.001	.004	.009	.011	.030	.029	.001	.003	.006	.006	.012	.009	.000	.001	.002	.002	.004
1947	17	.020	.001	.002	.004	.004	.010	.048	.001	.003	.008	.010	.027	.023	.001	.002	.005	.005	.010	.006	.000	.001	.001	.001	.003
1946	18	.017	.000	.001	.003	.003	.009	.041	.001	.002	.006	.008	.024	.018	.001	.002	.004	.004	.009	.004	.000	.001	.001	.001	.002
1945	19	.012	.000	.001	.002	.002	.001	.032	.000	.002	.005	.006	.020	.012	.000	.001	.002	.002	.006	.002	-	.000	.000	.000	.001
1944	20	.010	.000	.001	.002	.002	.006	.027	.000	.001	.004	.004	.017	.009	.000	.001	.002	.002	.005	.001	-	.000	.000	.000	.001
1943	21	.008	.000	.001	.001	.002	.005	.020	.000	.001	.002	.004	.013	.007	.000	.000	.001	.001	.004	-	-	-	-	-	-
1942	22	.005	-	.000	.001	.001	003	.017	.000	.001	.002	.003	.011	.004	000	.000	.001	.001	.002	-	-	-	-	-	-
1941	23	.003	.000	.000	.000	.001	.002	.011	.000	.000	.001	.002	.008	.002	.000	.000	.000	.000	.001	-	-	-	-	-	-
1940	24	.001	.000	.000	.000	.000	.001	.008	.000	.000	.001	.001	.006	.001	.000	.000	.000	.000	.001	-	-	-	-	-	-
1939	25	.001	.000	.000	.000	.000	.001	.005	.000	.000	.000	.001	.004	.001	-	.000	.000	.000	.001	-	-	-	-	-	-

1964-65 - *(continued)*

Calendar year of marriage	Marriage duration in completed years	Age at marriage																	
		30-34						35-39						40-44					
		Number of previous children																	
		Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more
1964	0	.279	.242	.019	.008	.005	.005	.183	.154	.012	.008	.004	.006	.054	.042	.005	.002	.002	.003
1963	1	.274	.207	.049	.009	.004	.005	.188	.144	.027	.008	.004	.004	.055	.045	.006	.002	.002	.001
1962	2	.233	096	.109	.018	.004	.006	.128	.059	.053	.009	.002	.005	.027	.015	.008	.003	.000	.001
1961	3	.204	.054	.104	.032	.008	.006	.096	.028	.046	.013	.006	.004	.014	.008	.004	.001	.001	.001
1960	4	.161	031	.075	.038	.009	.008	.066	.016	.029	.01·	.003	.004	.007	.002	.003	.000	.001	.000
1959	5	.134	.021	.055	.036	.015	.007	.039	.009	.014	.010	.003	.003	.004	.002	.001	.000	.001	.000
1958	6	.098	.014	.035	.026	.013	.010	.022	.003	.008	.004	.003	.003	–	–	–	–	–	–
1957	7	.074	.010	.022	.019	.012	.010	.016	.002	.004	.004	.004	.002	–	–	–	–	–	–
1956	8	.050	.006	013	.015	.008	.008	.007	.001	.002	.001	.001	.002	–	–	–	–	–	–
1955	9	.034	.004	.007	.009	.006	.007	*.002*	*.000*	*.000*	*.001*	*.001*	*.000*	–	–	–	–	–	–
1954	10	.023	.002	.005	.006	.004	.006	*.002*	*.000*	*.001*	*.000*	*.000*	*.001*	–	–	–	–	–	–
1953	11	.013	.001	.003	.004	.002	.003	–	–	–	–	–	–	–	–	–	–	–	–
1952	12	.009	.001	.002	.002	.002	.002	–	–	–	–	–	–	–	–	–	–	–	–
1951	13	.006	.000	.001	.002	.001	.002	–	–	–	–	–	–	–	–	–	–	–	–
1950	14	.002	.000	.000	.000	.001	.001	–	–	–	–	–	–	–	–	–	–	–	–
1949	15	*.001*	–	*.000*	*.000*	*.000*	*.000*	–	–	–	–	–	–	–	–	–	–	–	–
1948	16	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1947	17	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

APPENDIX B

Standard regions and conurbations of Great Britain as at 1st April, 1966

(in acres)

Standard regions and conurbations	Total	Land	Inland Water
North	**4,781,348.12**	**4,745,000.52**	**36,347.60**
Tyneside	57,709.41	57,419.23	290.18
Remainder	4,723,638.71	4,687,581.29	36,057.42
Yorkshire and Humberside	**3,503,076.45**	**3,485,271.28***	**17,805.17***
West Yorkshire	310,112.62	306,779.80*	3,332.82*
Remainder	3,192,963.83	3,178,491.48*	14,472.35*
North West	**1,973,288.29**	**1,949,605.67***	**23,682.62***
Merseyside	96,188.82	94,928.11*	1,260.71
South East Lancashire	242,920.31	238.489.14	4,431.17
Remainder	1,634,179.16	1,616,188.42*	17,990.74*
East Midland	**3,013,963.01**	**2,999,923.27***	**14,039.74***
West Midland	**3,215,632.06**	**3,193,476.46**	**22,155.60**
West Midlands	167,550.36	165,311.36*	2,239.00*
Remainder	3,048,081.70	3,028,165.10*	19,916.60*
East Anglia	**3,105,023.56**	**3,092,473.20**	**12,550.36**
South East	**6,774,275.09**	**6,740,217.62**	**34,057.47**
Greater London	394,487.41	390,072.03*	4,415.38*
Remainder	6,379,787.68	6,350,145.59*	29,642.09*
South West	**5,846,336.61**	**5,829,935.48**	**16,401.13**
Wales	**5,130,106.05**	**5,098,882.42**	**31,223.63**
Wales I	1,927,777.01	1,916,178.47	11,598.54
Wales II	3,202,329.04	3,182,703.95	19,625.09
Scotland	**19,463,783.99**	**19,069,514.88**	**394,269.11**
Central Clydeside	195,639.42	192,156.71	3,482.71
Remainder	19,268,144.57	18,877,358.17	390,786.40

*Estimated areas based on old records.

APPENDIX C

ARTICLES AND PAPERS BY OFFICERS OF THE GENERAL REGISTER OFFICE PUBLISHED DURING 1965

Lipworth, L.	Survival of cases of surgically treated mammary carcinoma with and without radiation therapy. *Lancet*, vol. ii, July. pp. 231-232.
Spicer, C. C.	Practical problems of record linkage on a national scale. *Mathematics and Computer Science in Biology and Medicine.* (Proceedings of conference held by the Medical Research Council in association with the Health Departments, Oxford, July 1964.) pp. 73-78.
Spicer, C. C.	The computer in medicine. *Journal of the Royal Society of Health*, vol. 85, no. 4. p. 184.
Spicer, C. C. *with* Adams, M. J. T. ...	Recent mortality from breast cancer. *Lancet*, vol. ii, October. pp. 732-734.
Wilson, W. A.	Morbidity and mortality from accidents. *Accident Prevention and Life Saving.* (Papers given at a convention held at the Royal College of Surgeons of England, May 1963.) pp. 34-42.
General Register Office	The age structure and regional distribution of the United Kingdom population, 1964 to 1981. *Economic Trends*, (Central Statistical Office), no. 145, November. pp. ii-xix.

INDEX TO STATISTICAL REVIEWS PART III (COMMENTARY VOLUMES), 1950-1964

Note: The index contains references to the principal subjects of comment and to the major tabulations Reviews are not referred to here since they are almost entirely regular annual tabulations and Commentary volumes in the past years have been transferred to Parts I and II with effect from

	1950	1951	1952	1953
ABORTION, DEATHS	52			
ACCIDENTAL DEATHS (see also AIRCRAFT, MOTOR, RAILWAY, WATER)	7,173	6,225	5,188	4,198
burns (see also home)	178	249		203
coding				
drowning				
electricity				
exposure to cold				
fall	178	234	193	206
fall of window cleaners				
firearms, explosives				
home				
injuries				
lightning				
places of recreation and sport				
seasonal variation				
trend	181	238	198	209
ACCIDENTAL MECHANICAL SUFFOCATION		235		
adults				
children, infant				
ACCIDENTAL POISONING		229	192	200
ACCIDENT - MOTOR AND OTHER ROAD VEHICLES	173	227	189	199
prevention in childhood (WHO)				
ADDITIONAL INFORMATION (Medical enquiries)				
ADOPTION		283	246	
ADRENAL FAILURE				
ADVERSE REACTION TO DRUGS			212	
AGE DISTRIBUTION, POPULATION		10,17	9,11	7
AGE, STANDARDISATION FOR FERTILITY		20	13	13
AGES OF MAN, MORTALITY OF				
AGRANULOCYTOSIS				
AIRCRAFT ACCIDENTS		229	192	200
AIR REGISTER BOOK (BIRTHS AND DEATHS)				
ALLERGIC AND ENDOCRINE DISEASES				
ANAESTHESIA, DEATH ASSOCIATED WITH			220	
ANAPHYLACTIC SHOCK AND OTHER ALLERGIC STATES				
ANTI-CANCER DRUGS, ADVERSE REACTION (see THERAPEUTIC MISADVENTURES)				
AORTIC ANEURYSM			138	
APLASTIC ANAEMIA (see also ADVERSE EFFECTS)				
AREA COMPARABILITY FACTORS (ACF)		86	64	54
ARTERIOSCLEROTIC HEART DISEASE, INCLUDING CORONARY DISEASE				
ARTICLES BY OFFICERS OF THE GENERAL REGISTER OFFICE	214	310	256	250
ASSOCIATED CAUSES OF DEATH, CHILDBEARING	49			
ATMOSPHERIC POLLUTION			4	

contained in the Commentary volumes for the years 1950-1964. Tabulations in Parts I and II of the are therefore not difficult to find. Certain tables which have appeared fairly regularly in the 1965 (see Explanatory Notes, page xiv, para. 1).

1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
	102			101	107	130	136	106	112	
4, 165	4, 161	3, 156	2, 162	67		93		230	167, 196	
									167	
170										
								240	197	
								239		
									167, 198	
	188	181	178	158	161	180	186	158	160, 196	
									198	
									200	
167	175	170	172	154	156	175	181	152	155	
									198	
									202	
									195	
170								153	156	
170	161	156	162	147	149	168	174	145	149	155
168								241	189	
									191-195	
168								241	190, 191	
166	170			67				235	167	
166	162	158	164	148	150	170	103, 175	146, 233	150	
		266								
				185		230				
	235	270	217	203	234	250	313			
									215	
		4, 230		172	192	213	274	261, 280	214	189
6, 8	6, 11	7	7	5	7	9	9			11
10										
						67				
				172					215	
166	169							233		
						253				
						88				
		217	192	171	190	211	272	253	210	181
									215	
				172					215	
30, 57	41, 63	66	56							
		187		65	70	90	102	72	165	
227	274	294	299	222	258	281				
		(see	1958)	109	111	93, 132	138	108	114	

	1950	1951	1952	1953
BIRTHS		2, 19	2, 12	2, 12
age and parity				
air register book				
fertility trends				
illegitimate				
legitimate				
age at marriage				
age of mother			23	
and fertility (see also FERTILITY)		28	21	20
duration of marriage			24	
live			38	
age, duration and parity			16	16
age, standardisation		20	13	13
Area Comparability Factor				
migration, effect of				
multiple		58	35	30
age of mother, legitimacy				
illegitimate				
mono-zygotic and dizygotic twins				
order (see also FAMILY SIZE)				
period of gestation				
place of confinement				
pre-marital conception	89	25	18	18
rates				
geographical	128	59	36	31
geographical, fertility				
illegitimate		61	38	33
per 1,000 women aged 15-44		19	12	12
United Kingdom	152	269	236	229
seasonal	127	54	32	27
sex ratio		56	34	29
tabulation basis		24	16	16
trend, increase since 1955				
BITES, VENOMOUS ANIMALS				
BRONCHITIS	159	208		174
BRUSSELS TREATY ORGANISATION	212			
BUILDINGS IN WHICH MARRIAGES MAY BE SOLEMNIZED		75	52	
BURNS (see ACCIDENTAL DEATHS)				
CANCER	6, 138	5, 179	5, 147	4, 138
bladder			154, 180	
bone			160, 182	
brain			160, 184	
breast		193	152, 179	
cervix uteri				
children		187		
corpus uteri				
density of population and urbanisation	142			138, 146
digestive tract			156	
female genital organs (see also UTERUS)		193	152, 178	145

1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
2, 9	2, 14	2, 11	1, 9	27	41	5, 41	4, 57	33	64	51
79	214	246	197	188	211	233	292	282	237	
						253				
								54		68
32	42	11					59	52	64	63
								50		55
										55
17	21	17	14	33	46	46	63	54		
										57
	9, 32									
13	18	14	12	30						
10										
30	41									
								63		
28	39	33	29	48	58	60	86			
		33					88			
							93			
		38					90			
		24	20	40	54	57	76			
								67		
	214	244	197	187	210	232	291	281	236	
15	19	15	13	31	43	43	59	67		
29	40	43	29	48	65	63	100	64		
		288		216	254			310		
32	42	15, 290	31	218	256					
9	14	11	9	27						
208	221	255	203	194	222	238	303	289	242	209
26	35	28	24	43	59	60	96	45	77	53
27	38	32	27	46	57	60	86	45, 52	78	10, 58
		14	12	30	42	42	58			
								33, 48	64	51
		212			201					
		189		66, 145	147	166, 191	172	143	147, 163	153
218										
			44					22		
4, 129	124, 195	3, 126	110, 127	63		87	102	72	79	82
			140	138	140	159	165	135	140	146
			140	134	136	156	162	132	136	142
				133	135	155	161	131	135	141
	125, 149		115	137	139	159, 200	165	135	139	145
	149			137	139	159	165, 210	135	139	145
				137	139	159	165, 210	135	139	145
				131	133	153	159	129	133	139
145			140	135, 136	137, 138	157	163	133	137	143
	125		115	137	139	159	165, 210	135	139	145

	1950	1951	1952	1953
CANCER *(continued)*				
gallbladder			160	
geographical	142, 212	196		138
histological type	142		164	158
intestines			156, 173	
kidney			158, 180	
larynx			158, 176	
lip			157, 170	
liver			158, 174	
lung, bronchus (including pleura)	146	193	149, 177	
geographical, urbanisation		185		139
trends				
male genital organs			154	
marital status				
mouth, tonsil and upper respiratory passages			157	
oesophagus			156, 172	
ovary			154, 178	
pancreas			160, 175	
pharynx			158, 171	
pleura (see lung)				
prostate		193		
rectum			157, 174	
regional variations (see geographical)				
registration				
and statistical presentation (WHO sub-committee)		276		
conference				
sex ratio				147
skin			158	
Standardised Mortality Ratios				
stomach			156	
testis				
thyroid gland			160	
trends, secular	145	200		
urbanisation (see density of population)				
uterus			152	142
various sites at different ages			165	154
CARDIO- AND CEREBRO VASCULAR DISEASE				
adults				
children				
geographical				
method of certification				
place of death				
trends				
CENSUS OF POPULATION AND HOUSING (EUROPEAN WORKING GROUP)				
CENSUS RESULTS (seminars on appraisal and use) (comparisons and adjustments)				
CENTRAL INDEX OF SERVICE VOTERS			250	245
CENTRAL REGISTER, NHS			248	242
CERTIFICATES AND SEARCHES		282	245	241

1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
132, 146	149		140	131	133	153	159	129	133	139
152	124		110	126	128	148	154	124	128	134
			114	136	138	157	163	133	137	143
			140	133	135	155	161	131	135	141
145	142, 149		140							
			114	135	137	156	162	132	136	142
			114							
133, 145	134, 149	186	124	137	139	158	164	134, 164	138	144
	145		138, 140	131	133	153	159	129, 168	133	139
				133	139	158	164	134, 164	138	
							209			
			114							
			140	135	137	157	163	133	137	143
			115	138	140	159	165, 216	135	139	145
			140	137	139	158	164	134	138	144
			114	135	137	157	163	133	137	143
			115	138	140	159, 201	165, 221	135	139	145
			114	136	138	158	164	134	138	144
202		251			216					
	233									
			139							
	149			131	133	153	159	129	135	139
135				136	138	157	163	133	137	143
							217			
143	138			133	135	155	161	131	135	141
				132	134	154	160	130	134	140
139	126	152	114	133	135	155	161	131	135	141
4, 155			152	140, 199	142	90, 161	167, 222, 296	138	142	148
							225			
							223			
			153, 155	142	144	163	170, 234	140	144	150
							236			
							236			
							236			
	229	263	212	196	226					
					227				21	
224	238	276	222	213	239	262	322			
221	236	271	218	204	235	255	314			
220	235	269	217	203	234	249	311			

	1950	1951	1952	1953
CERTIFICATION OF CAUSE OF DEATH		222		
accuracy				
acknowledgements				
cause	7,196	250	227	220
comparison before and after post-mortem				
duration of illness	198			
length of stay in hospital prior to death				
method of certification			227	220
multiple causes	198	6,250		
number of causes entered	196			
references				
secondary causes jointly certified with certain diseases	200			
seen after death	204	267	227	
CHILDBEARING AND PREGNANCY, CAUSES OF DEATH				
CLASSIFICATION CENTRE, WHO		274		238
COHORT ANALYSES (LUNG CANCER, BIRTHS)		40	27	23
COLD WINTER OF 1963				
COMMITTEES, ADVISORY ON MEDICAL NOMENCLATURE AND STATISTICS, AND OTHERS			255	247,249
COMPARATIVE MORTALITY FIGURE (CMF)		86		54
COMPARATIVE MORTALITY INDEX (CMI)	9	85	64	54
COMPARISON ICD SEVENTH REVISION				
CONCEPTIONS, PRE-MARITAL		25	18	18
CONFERENCES AND CONGRESSES		270	242	234
Asian statisticians				
British Commonwealth statisticians		278		
Cancer				
Colonial Government statisticians				239
Council of Europe				
European Statisticians				
International				
congenital malformations				
Labour statisticians				
mental health				
poliomyelitis				
population				
sick absence statistics				
vital and health statistics				237
medical records			243	
radiology	212			
CONGENITAL MALFORMATIONS (see also INFANT MORTALITY, STILLBIRTHS)				
conference (see CONFERENCES)				
deaths				
geographical				
international comparison				
notifications				

1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
		187	150	65	142	89, 161	229	138	142	148
202										
		192								
192		3, 182			206		295			
		182								
		185								
197		218	190	169	208	228	289	259	234	182
	193									
		192								
192					206					
		(see	1958)	104	110	131	137	107	113	119
215	232	266	213	199	228	245	308			
20	24	19	16	34	47	49	67	166		
									162	
201	272, 273	250	297	219	216	278	295			
57	62	66	56							
			226							
15	19	15	13	31	43	43	59	67		
213	227	261	209	195	224	239	305			
						241	307			
		266				246				
				200	231		309			
					229		309			
		263	211	196	226	241	306			
						246				
216			214							
							309			
218										
217					230					
			215							
					172			173, 194		172
								178	146	152
					174			174		
			161							
										171

	1950	1951	1952	1953
CONGENITAL MALFORMATIONS *(continued)*				
sites:				
central nervous system (see also MONSTROSITY, HYDROCEPHALUS, SPINA BIFIDA)				
circulatory system				
digestive system				
CONSULAR REGISTERS				
CORONERS, CERTIFICATION OF DEATH BY				222
CORONARY ARTERY DISEASE				
COUNCIL OF EUROPE				
CRETINISM				
DEATHS (see also ANAESTHESIA, ASSOCIATED CAUSES - CHILDBEARING, CERTIFICATION, POST-MORTEM, INQUEST AND INDIVIDUAL CAUSES)				
age-groups and causes	19		71	57
aircraft accidents		229	192	200
air register book				
area of residence			67	57
assigned to certain infectious diseases and corrected notification				
associated causes (see ANAESTHESIA, ASSOCIATED)				
bites				
causes (different ages)	19	93	71	57
cause coding comparison (ICD REVISION)				
cause coding rules				225
change in coding procedure				
changes 1920-1960				
geographical				57
institutions				58
maternal (see also MATERNAL DEATHS, ASSOCIATED CAUSES)	5, 45			97
multiple cause analysis		6, 250		
place of death				58
quarterly	14	89		56
rates	9	269	64, 236	229
age and sex	9, 14	90	66	61
different parts of the country	23	100	77	66
civilian	9	84		
crude	9	84	64	53
comparison (see STANDARDISED MORTALITY RATIO)				
Equivalent average (EADR)		85	65	54
local adjusted		87		55
method of basing on population				
marital status and age				
quarterly	14	89		56
ratio of local adjusted to national				55
seasonal		98	73	60
sex-age specific				
specific	9			
standardised (see STANDARDISED MORTALITY RATIO)				
trend, past (averaged rates)				

1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
										171
								174		
			156	144	146	165	171	142, 175	146	152
								176		
						250				
197		218	190	169	208	228	289	259	234	187
		187		65	70	90	102	72	165	
							309			
									170	
						6	5			
59	68	76	62							
166	169									
						253				
54										
					184	206	267	243	206	
					201					
59, 70	68	76	62	61						
			293							
170										
						183				
54										
191		213	185	164	201	222		253	236	182
	3, 99				73	93	103	73	81	83
	193	193								
191		213	185	164	201	222	285	253	236	182
58	66	69	60	71	77	101	107	77	84	90
268	61, 221	255	204	194						
59	67	72	63	72	78	102	108	78	85	91
67	68	76	67	77	82	106	112	82	90	
56	61	65	55			65				
		66	56							
	63	66	56							
55										
				76						
58	66									
	63									
63	66	69	60	71	77	101	107	77	84	90
	61	65	55							
56										
				72	78	102	108	78	85	

	1950	1951	1952	1953
DEATHS *(continued)*				
recent trends, selected causes				
selected causes at different ages	19	93		
sex and age (see rates, age above)				
United Kingdom (or Great Britain)			236	229
DENTAL ANAESTHETICS				
DIABETES				
DIAGNOSTIC INDEX (see INTERNATIONAL CLASSIFICATION OF DISEASES)				
DIPHTHERIA DEATHS	5,63	133,138	211	
DIPHTHERIA NOTIFICATIONS				
DISEASES				
cardiovascular				
children of pre-school age				
children of school age and young persons				
elderly				
general view				
geographical variations				
infants				
major trends				
middle aged				
place of death and mode of certification				
young adults				
cerebro-vascular				
circulatory system		6,217		
congenital malformations				
geographical distribution		220		
mortality trends		217		
sex and age distribution		219		
statistical classification		217		
digestive system				4,189
gastro-intestinal				
genito-urinary				
regional standard ratios				
sex ratios				
respiratory system	7,157	6,206		4,173
vascular				
DIVORCES		3,80	2,60	3,50
ages and previous marital condition of parties, duration of marriage				
children of the marriage				
duration of marriage by marriage age of wife				
marriage age of husband and wife in combination by year of marriage				
new tables				
parties to whom and grounds on which decrees granted				
present age of parties				
previous marital condition by marriage age and year				
rates				
re-marriage of divorced persons		80	60	50

1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
				63						
208	222	256	204	194	222	238	304	289		
									212	
	194									
			181		185	207	267	244	207	
					83, 186	89, 208	117, 269	87, 245	94, 207	177
4, 155			152	199		90	222			
							223			
							223			
							227			
							232			
			153				234			
							222			
							236			
							225			
							236			
							225			
			152							
			2, 149				102	72	80	82
			156							
			153							
						91				
	150					92				
	156									
	158									
						91				
						89				
3, 50	2, 57	2, 61	1, 47	18	31	32	45	25	56	37
			50							
			53	23	37	38	54			47
			52	22	35	36	49			41
			50	21	36	37	50			44
			48							
			49	20	33	34	47			39
			50	21	34	35	48			
			52	23	37	38	51			46
1			49							
51	57	61								27

	1950	1951	1952	1953
DRAFT ENTRIES, COPIES OF				
DROWNING, ACCIDENTAL				
DRUGS, ADVERSE REACTION			212	
DYSENTRY	5, 61	132		
ECONOMIC AND SOCIAL COUNCIL (UN)				235
ELECTIONS, LOCAL GOVERNMENT				
ELECTORAL REGISTERS AND ELECTORATE		293	249	243
ELECTRONIC DATA PROCESSING MACHINES (European Working Group)				
ENCEPHALITIS (including SECONDARY TO INFECTIOUS DISEASE)	66	135		111
ENDOCARDITIS				
ENDOCRINE DISEASE				
EPIDEMIOLOGY				
health administration				
cancer of the lung				
mental disorders				
EQUIVALENT AVERAGE DEATH RATE (EADR)		85	65	54
ERYSIPELAS	62			
ESTIMATES OF LOCAL AUTHORITY AREA				
EXPECTATION OF LIFE	13			
life table			66	59
life table, survival factors		87		
trend				
FALL (see also under ACCIDENTAL DEATHS, fall of window cleaners)		246	206	216
FAMILY SIZE				
FERTILITY, LEGITIMATE		2, 19, 28	2, 12, 21	2, 12, 20
age at marriage				
age of father				
age of mother and duration of marriage		31, 34	23, 26	22
cohort analysis		40	27	23
duration of marriage and parity (birth order)		36	26	22
first two years of marriage		37		
geographical		59	36	31
increase				
standardisation by age		20	13	13
ultimate family size				
year of marriage				
FERTILITY, NUMBER OF WOMEN AT RISK				
FIREARMS, DEATH FROM				
FIRST MATERNITIES, LEGITIMATE		49	29	25
FOOD POISONING	60	131		
GAS POISONING				
GASTRO-INTESTINAL DISEASES				
GENERATION REPLACEMENT RATES				
GENETICS AND RADIATION STUDY (WHO)				

1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
									4	
								240	197	
		4, 230		172	192	213	274	261, 280	214	189
				83	88	111	117	87	94	
214	228	262	210	197	227	241	307			
		274	220	207	238	258	318	292	245	213
222	237	272	219	205	236	256	315	290	243	211
							306			
			185	83, 162	88, 187	111, 209	117, 269	87, 245	94, 208	177
157										
						88				
							295			
						244				
					228					
						244	308			
		66	56							
				83	88	111	117	87	94	100
							15			
		68	57							
58	64	68	58	69	75	99	107	75	83	89
				70	76	100	106	76	84	90
		151	178	158	161	180	186	158	126, 160	166
				214	49, 240	50, 264	32, 67	37, 58	68	
2, 9, 17	2, 14, 21	17	14	33	46	46	63, 338	33, 308	248	
						48	64			
							66			
19	22, 240	17	14	33	46, 240	46, 264	63, 326	36, 296	67, 248	59
20	24	19	16	34	47	49	67			
19	22	25	21	41, 214	55, 252	46	338	308	248	215
29	40	43, 288	31	216	254	63	100	65, 310		
								54		
10										
						51	69	58	75	72
					240	264	326	296		
	7									
									200	
24	34									
				83	88	111	117	87	94	
									167	
						91				
	27	22	19	38	52	55	74			
						243				

	1950	1951	1952	1953
GENITO-URINARY DISEASES				
GREAT BRITAIN VITAL STATISTICS		268	234	227
GROSS REPRODUCTION RATES				
GRO SENIOR STAFF (STATISTICAL DIVISION)		308	255	249
HAEMORRHAGE				
HEALTH STATISTICS (WHO EXPERT COMMITTEE)	209	275		
HEART DISEASE (see CARDIO)				
HODGKINS DISEASE			161	
HOME, ACCIDENTAL DEATHS (see ACCIDENTAL DEATHS)				
HOMICIDE			195	
HOMOLOGOUS SERUM JAUNDICE				
HOSPITAL REGIONS AND STANDARD REGIONS, RELATIONSHIP				
statistics and their application in HEALTH ADMINISTRATION (European conference)				
HOUSING AND POPULATION, CENSUS (EUROPEAN WORKING GROUP)				
HYDROCEPHALUS				
HYPERTENSIVE DISEASE				
HYPOTHERMIA				
ILLEGITIMATE BIRTHS			38	33
geographical and age of mother				
pre-marital conception		25	18	18
IMMATURITY	29	108		
INDEX OF DISEASES AND CAUSES OF DEATH	221			
INDUSTRIAL MEDICINE, PERMANENT INTERNATIONAL COMMITTEE				
INFANT MORTALITY (see also CONGENITAL MALFORMATIONS, ACCIDENTS)	4,25	4,104	4,86	3,69
age groups	37	116	93	69
age and cause	37	107	87	74
cause	29	118	91	74
definition	26	106	86	72
due to milk allergy				
early neonatal by cause	39	118	94	70
geographical	33	110	93	80
illegitimate birth, children of	43	129	106	
measurement and methods	25	106	86	
neonatal	39	105	93	70
perinatal period (see PERINATAL MORTALITY)				
rates (including other UK countries)		269	236	229
seasonal	39	110	102	78
secular trends, various age-groups	35	113	100	81
social class	31	110		
INFARCTION AND PULMONARY EMBOLISM				
INFECTIOUS DISEASES (see also NOTIFICATION)	59,67	4,131	4	3
delayed death		136	210	218
uncommon				
INFECTIVE HEPATITIS				
INFLUENZA	157	206		173
INHALATION AND INGESTION OF FOOD, CHILDREN UNDER 5				
INOCULATION, PROPHYLACTIC (see also VACCINATION)			212	220
INQUESTS				222

1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
	150					92				
206	220	254	202	193	220	236	300	287	242	209
						55	74			
226	273	293	299	221	257	280				
									215	
215		265	213	197		243				
4, 155		188	152	140, 199	142	90, 161	167, 296	138	142	148
		146		139	141	160	166	136	140	146
								162		
55										
				198						
	229									
								175, 203	180	169
		188								
									166	
32	42							52		63
				218	256			312		
15	19	15	13	31	43	43	59			
74										
			215							
3, 68	3, 79	2, 84	2, 74	58	71	68	103	73	80	83
80	82	90	76	85	90	113	119	89	95	101
80	84	90	80	88	93	116	122	94	100	104
69	80	90	80	88	93	116	122	92	98	104
										86
82	82	90	80	88	93	116	122	96	98	104
70	81	89	85	93	99	121	127	97	103	109
	95		78	87	92	115	121	91	97	103
82	82	90	80	88	93	116	122	93	98	101
208	221	256	204	194	222	238	303	289	242	210
84	86	94	84	92	98	120	126	96	102	108
69	94	85	76	85	90	113	119	89	95	113
159										
4						84			79	176
189	190	208	180							
					184	206	267	243	206	
								161		
168										
191	191	209	181	161	190	211	272	251		
197		218	190	169	208	228	289	259	234	187

	1950	1951	1952	1953
INTER-AMERICAN SEMINAR ON CLASSIFICATION OF DISEASES				
INTERNATIONAL CLASSIFICATION OF DISEASES			229	
adaptation as diagnostic index			229	
INTERNATIONAL CONFERENCE (see also CONFERENCES)				237
INTERNATIONAL CONGRESS (see also CONFERENCES AND CONGRESSES)	212		243	
INTERNATIONAL CO-OPERATION ON HEALTH AND POPULATION STATISTICS		7,270	242	4,234
INTERNATIONAL HEALTH STATISTICS	8,209			
INTERNATIONAL LABOUR ORGANISATION (ILO)				
INTERNATIONAL STANDARD CLASSIFICATION OF OCCUPATIONS (WORKING GROUP OF EXPERTS)				
INTERNATIONAL STATISTICAL INSTITUTE				239
JAUNDICE (HOMOLOGOUS SERUM)				
LEGISLATION				5
LESIONS, VASCULAR				
LEUKAEMIA			161	
regional variations				
secular trends				
LIFE TABLES AND EXPECTATION OF LIFE		87		56
LIGHTNING, DEATH FROM				
LIVE BIRTHS		2, 19, 61	2, 12, 38	12, 33
LOCAL AREAS, AGE DISTRIBUTION		17	11	
areas, definition				
estimates of population				
government elections				
LYMPHOSARCOMA				
MALIGNANT NEOPLASM IN CHILDHOOD AND ADOLESCENCE (see also CANCER)	6,140	5,179	5,147	138
MALFORMATIONS (CONGENITAL)				
central nervous system				
circulatory system				
digestive system				
MAN POWER COMMITTEE (OEEC)				239
MARINE REGISTER BOOK				
MARITAL CONDITION, STATUS		11	10	9
cancer, genital				
estimates and methods				
MARRIAGES		3, 62	2, 40	2, 35
ages of brides and bridegrooms in combination				
ages under 50				2, 46
divorced people		80		
first				
age distribution				
ages under 30				
bachelor				
rates				
spinster				

1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
			214							
201	230	250	226		231	245				
200		251								
201			214				309			
				200						
5, 213	4, 227	4, 261	2, 209	195	224	239	305			
216	232		214							
	232									
	233		214	200		246	309			
								162	215	
		187		65						
		126	133			193		137	141	147
		139								
		137	133					137	141	
	64					183				
									202	
2, 9, 32	2, 14, 42	2, 11	1, 9, 31	27	41	5, 41	4, 57	33	64	
8	11									
54										
							15			
		274		207	238	258	318			
		146								
4, 129	124, 195	126, 147	2, 110	63		87	102	72	79	82
								176		
								174		
			156	144	146	165	171	142, 175	146	152
								176		
216	232				230	245				
						253				
8	6	5, 8	8	5	8	10	10		43	12, 28
							209			
	7				164				17-23	28
2, 34	2, 44	2, 48	1, 32	7	10	12	20	8	49	17
							29, 358			
50		61			17	20	28			
					10	12	20			17
										17
										21
					10	12	20			
										20
					12	15	23			

	1950	1951	1952	1953
MARRIAGES *(continued)*				
geographical		74	51	46
incidence at reproductive ages		66	44	39
influencing factors		69	47	42
minors		65	43	39
population structure				
preliminaries				
projection of future number				
rates, and fertility		67, 269	44, 235	40, 228
rates by sex, age and previous marital condition		63	41	36
rates, England and Wales		67	44	40
rates, United Kingdom		269	235	228
seasonal incidents		72	49	45
solemnization			53, 252	
standardised rates				
MARRIED WOMEN				
estimates by age and duration of marriage		13		
reproductive age		70	48	43
MASS MINIATURE RADIOGRAPHY STATISTICS				
MATERNAL DEATHS (see also ASSOCIATED CAUSES)	5, 45			97
causes	48			
delayed				98
geographical	49			
trend	47			
MATERNITIES, NUMBER OF PREVIOUS CHILDREN (see also FERTILITY, age and parity)		43		
first		49	29	25
MATERNITY RATES				23
conversion factor				
MEASLES	67	135		
MEDICAL ENQUIRIES				
MEDICAL NOMENCLATURE AND STATISTICS ADVISORY COMMITTEE			228	
members			231	247
report on work			228	
MEDICAL NOMENCLATURE AND STATISTICS ADVISORY SUB-COMMITTEE			232	247
cardio-vascular				
statistics				
MEDICAL NOMENCLATURE AND REGULATIONS 1948, CHANGES	211			
statistics, presentation				
MENINGITIS AND ENCEPHALITIS				111
MENINGOCELE				
MENINGOCOCCAL INFECTION	65	134		
MENTAL DEFICIENCY, SCIENTIFIC STUDY (LONDON CONFERENCE)				
MENTAL DISORDERS, SUB-COMMITTEE				
MENTAL HEALTH				
congress (International)				
statistics (national)				
studies (WHO Expert committee)				

1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
46	54	59	40	15	28	29	44			
39										
42	49									
38	48	51	35	10	13	16	24			
		53	35	10	19	21	38			
								21		
							34			
39, 207	48, 221	255	203	194	221	237	303	287		19
35	45	48	32	7						
34, 39	44, 221	48, 255	32, 203	7, 194	10, 221	12, 237	20, 303	8, 287		
207	221	255	203	194	221	227	303	287		
44	53	58	39	14	24	26	42			33
			41					17, 19		
	53									
8										
42	50	55	38	13	22	25	40			
114		117	104	120	122	142	148	118	122	128
	3, 99				73	93	103	73	81	83
				99	105	131	137	107	113	119
				99	105	126	132	102	108	116
225										
24	34									
20	29	18	15	34	47	47	64	35	66	59
							58			
				83	88	111	117	87	94	100
				185	206	230				
200		250					295			
203	272	252	297	219	217	278	297			
200		250			216		295			
204	272	252	298	220	218	278	296			
					217					
					217					
203		251								
								175, 200		
				83	88	111	117	87	94	100
						246				
							296			
				199						
							309			
					216					
						243				

	1950	1951	1952	1953
MIGRATION			8	6
basis of estimate				
pre-1961 census				
International Passenger Survey				
mid-1961 sex-age distribution				
projection				
regional				
revision of pre-1961 population estimates				
the effects				
MISADVENTURE THERAPEUTIC			212	
MISCELLANEOUS			210	218
MONSTROSITY				
MORBIDITY				
enquiries				
measurement				
statistics (International)				
MORTALITY	3,9	3,84	3,64	3,53
adjusted ratios of male to female		85	65	54
Area Comparability Factor (ACF)				
Area of usual residence				
Comparative Mortality Index (CMI) (see Index)				
definitions		84	64	53
effects of cold winter of 1963				
geographical	15	90	67	113
index (CMI)	9	85	64	54
life tables (functions)				55
marital status				
maternal	5,45			97
method of certification				
notifiable diseases				
post-mortem (see POST-MORTEM EXAMINATION)				
rate, crude				
rate, local adjusted				
rate, quarterly				
rate, sex and age				
seasonal variation by sex, age and cause of death			66	
social class	3		2	
standardised ratio (see STANDARDISED)				
trend	10	87	65	55
urbanisation				4
MOTOR VEHICLE AND OTHER ROAD VEHICLE ACCIDENTS	173	227	189	199
MULTIPLE BIRTHS		58	35	30
twins, dizygotic and monozygotic				
MULTIPLE CAUSE OF DEATH ANALYSIS	198	6,250		
MULTIPLE MYELOMA				
MYOCARDIAL DEGENERATION				
MYXOEDEMA				

1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
6	6					6	6	4	28-38 30 31 33	4 7
							14		36	
			6					63		5
		4, 230		172	192	213	274	261	214	189
189	190	208	180	161	184	206	267	243 174, 197	206	176
202 201		252 251			217					
3, 54	3, 61 62 63	2, 65 66	2, 55 56	52	69	65	101	71	79	81
		65	55							
56	61	65	55						162	
59	68	76	67	56						
57	62 64	66	56							
				55	164					
	3, 99				73		103	73	81	83
192		217	189	168	206	227		261 71	236 79	 81
	61 63 63 66									
		69	59							
58	63	67	56	63				73		
166	162	158	164	148	150	170	103, 175	146, 235	150	156
28	39 193	33 38 146 188	29	48	58	60	86 91		 169	

	1950	1951	1952	1953
NATIONAL HEALTH SERVICE CENTRAL REGISTER			248	242
NATIONAL REGISTRATION		7, 285	248	
NEONATAL PERIOD (see INFANT MORTALITY, PERINATAL)				
NEOPLASMS (see also CANCER)	6, 138	5, 179	5, 147	138
NET REPRODUCTION RATE (see REPRODUCTION)				
NON-RESPIRATORY TUBERCULOSIS				126
mortality	119	160	110	136
notifications and morbidity	119	160	109	
regional	122	161		
NOTIFIABLE INFECTIOUS DISEASES, NOTIFICATIONS		4		
NOTIFICATION ARRANGEMENTS AND STATISTICS				114
NUPTIALITY TABLES				
OPERATIONS (MISADVENTURES)			229	
ORGANISATION FOR EUROPEAN ECONOMIC CO-OPERATION (OEEC)				239
OVERDOSE OF DRUGS			212	
PARATYPHOID (see TYPHOID)				
PARLIAMENTARY CONSTITUENCIES, SIZE, ELECTORS	170	293	249	243
PERINATAL MORTALITY	38	118	96	69
PLACE OF DEATH				
PLASMOCYTOMA (MULTIPLE MYELOMA)				
PNEUMONIA	158	207		173
cold winter				
POISONING (see ACCIDENTAL POISONING, SUICIDE)				
POLIOMYELITIS (ACUTE)	6, 65	134		
POLLUTION, ATMOSPHERIC			4	
POPULATION		2, 8, 69	1, 6, 235	2, 6, 228
age		10		6
changes				
children under 15		18	11	10
conurbations and regions				
estimate correction			7	
future prospects (and trends)				10
growth				
local; age distribution		13, 17	10, 11	10
marital condition		11	10	9
movement			8	6
natural increase				
projection				10
regional (see also conurbations and regions)				
revision of estimates			7	
sex; ratios		10	6	6
structure			9	6
relation with marriage rates				
POST-MORTEM EXAMINATIONS BY AGE (PM OR OPERATION)				
POST-MORTEM EXAMINATIONS AND METHOD OF CERTIFICATION				
PRE-MARITAL CONCEPTION				
illegitimate births		25	18	18

1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
221	236	271	3, 218	204	235	255	314			
4, 129	124, 195	3, 126	2, 110	63		87	102	72	79	
	114	108	95							
113	120	109	97	119	121	141	147	117	120	126
114	114	110	98	119	121	141	147	117	120	126
	120									
				83	88	111	101, 117	71, 87	79, 94	100
		292		38	53					
200		250		180	198	219	280	271	222	195
216	232				230	245				
		239		179	197	218	279	269	221	194
222	237	273	219	206	237	257	316	290	243	
84	84	92	76	85	90	113	119	89	95	
		214	186	165	203	223	285	255	230	
		146								
		189		65		189			163	
									163	
				83	88	111	117	87	94	100
2, 6, 207	2, 6, 221	1, 5, 255	1, 4, 203	2, 194	2, 221	2, 237	2, 301	2, 287	39	2
6	6	5								7, 10
			7	4	7	8	8			
8	11	8								
	11	9							46	
										5
	232		8	6	8	10	10	5	44	
							3	2	39	2
8	8, 11	8								
8	6	5	8	5	8	10	10		43	12
6	6									
							5	3	40	3
	232		8	6	8	10	10	5	44	
									46	
										5
6	6	5, 6	7	4	7	9	9		42	10
			7	4	7	8	8	5	41	10
			35	10	19		38			
	78	77	67	79	84	108	114	84	92	98
				169	208	228	289	259	234	
								67		
15	19	15	13	31	43	43	59			

	1950	1951	1952	1953
PROJECTIONS				
births				
marriages				
migrations				
populations				10
PUBLIC HEALTH ASPECTS OF CHRONIC DISEASE (WHO SYMPOSIUM)				
committee (see also WESTERN EUROPEAN UNION)				
PULMONARY EMBOLISM AND INFARCTION				
RADIATION, GENETIC STUDIES				
RAILWAY ACCIDENTS		226	188	199
RECORDS KEPT UNDER FOREIGN MARRIAGE ORDERS IN COUNCIL				
REDISTRIBUTION OF PARLIAMENTARY SEATS		294		
REGIONAL COMMITTEE FOR EUROPE (WHO)				
REGIONS - RELATIONSHIP BETWEEN HOSPITAL AND STANDARD				
REGISTERS KEPT BY BRITISH HIGH COMMISSIONERS				
REGISTERS SERVICE DEPARTMENT				
REGISTRATION ACTS, OFFENCES		284	247	
REGISTRATION				
births				
incomplete statement			18	17
deaths				
marriages				
service (local organisation)		282	245	241
stillbirths				
time lag (births)		53	31	27
REGISTRATION OF BIRTHS, DEATHS AND MARRIAGES ABROAD		283	247	
RE-MARRIAGE			61	3
divorced persons		82	61	51
widowed and divorced women				
REPLACEMENT OF POPULATION (see also FERTILITY, REPRODUCTION)				
REPRODUCTION RATE (see also GROSS REPRODUCTION RATES)		21	14	13
REPRODUCTIVITY		2, 19	12	12
RE-REGISTRATION OF BIRTHS OF LEGITIMATED PERSONS		283	246	
RESPIRATORY SYSTEM, DISEASES	157	6, 206		173
tuberculosis				120
geographical variations	120	161	110	133
mortality	117	158	107	130
mortality by social class			112	
notifications and morbidity	116	157	107	129
rates, international comparison				
rates, regional variation				
trends	124	164	116	130
RETICULOSARCOMA				
RETICULOSES			160	
REVISION OF ICD (SEVENTH), COMPARISON				
ROAD ACCIDENTS	173	227	189	199

1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
							11			
							34			
							14			
	232		8	6	8	10	11	5	44	
			213							
					230					
159										
						243				
165	170							235		
						252				
					228	242				
	55									
						252				
						251				
									3	
14	18	14	12	30	42	42	58			
									3	
									7	
220	235	269	3, 217	203	234	249	311		2	
									7	
35	34	28	24	43	42	42	58			
						250				
3	2, 57	2, 61			14	17	24			23
51	58	63			17	20	28			27
			35	10	14, 19	17	26			23
					52	55	74			
11	15	13	11	29	52	55	74	38		
9	14									
	235	269	217	203	234	249	312			
						91				
	110	104	92							
112, 116	116, 118	112	99	113	115	136	142	112	117	123
111	113	105	93	113	115	136	142	112	117	121
112	110	107	103	115	117	138	144	114	116	121
112										
	116									
115	113	105	93	110	112	133	139	109	115	121
		146								
			226							
166	162	158	164	148	150	170	103, 175	146, 235	150	156

	1950	1951	1952	1953
SCARLET FEVER	6, 62	132, 137		
SEARCHES AND CERTIFICATES		282	245	241
SERVICE DEPARTMENTS REGISTERS				
SERVICE VOTERS, CENTRAL INDEX			250	245
SHOCK, ANAPHYLACTIC				
SICK ABSENCE, STATISTICS CONFERENCE (PERMANENT INTERNATIONAL COMMITTEE ON INDUSTRIAL MEDICINE)				
SIGNATURE BY MARK			57	
SMALLPOX (see also VACCINATION)				
SOUTH EAST ASIAN SEMINAR ON CERTIFICATION AND CLASSIFICATION OF CAUSES OF MORTALITY AND MORBIDITY				
SPECIALISTS WHO ADVISED ON SECTIONS OF THE CODE OF OPERATION PROCEDURES AND DRAFT CODE OF ANAESTHETIC PROCEDURES			233	
SPINA BIFIDA				
STAFF (see G.R.O.)				
STANDARDISED MORTALITY COMPARISONS	9			
STANDARDISED MORTALITY RATIOS	9	84	64	54
time comparison (trend)	10	89	65	55
STATISTICAL RECORD				
births				
changes in statistical methods				
deaths				
marriages				
processing operations				
stillbirths				
submission of returns				
STILLBIRTHS	25	61, 104	3, 38, 86	3, 33, 69
age and parity of mother				
birth weights				
causes	33	112		
definition of	26	106	86	
duration of pregnancy				
geographical	32	110		
maternal age				
measurement	25	106	86	
multiple birth				
parity of mother				
place of confinement				
previous pregnancies				
rates, definition	26	107	86	72
relationship to reproductive wastage	27			
seasonal	31	110		
social class	31	110		
trends	35	113	101	81
STINGS, VENOMOUS INSECTS				
STREPTOCOCCAL SORE THROAT	62	132		

1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
				83	88	111	117	87	94	100
220	235	269	217	203	234	249 251	311			
224	238	276	222	213	239	262	322		215	
			215							
					184	206	267	243	206	176
				198						
205										
								175, 176, 200, 229	180	
56	62	66	56	57, 73	79	65, 103	109	79	86	92
58	63	67	57	68	74	98	104	74	82	88
									8	
									8	
									15	
									8	
									9	
									9	
									8	
									9	
32, 68	3, 43	47	31	51, 58	58	67	189	73	80, 172	83
79	214	244	197	186	210	232	291	281	185, 228, 240	202
							207			
							190	225	177	168
							189			
							205			
			201	192	215	235	201, 294	228, 286	176, 241	
79	214	246	197	191	214	234	194, 292	283	238	202
							199			
79	214	244	197	191	214	234	196, 292	283	237	202
79	214	248	200	191	214	234	203, 292	283	238	168
							198			
							200			
									186	
69	94	101	78	85	90	113	119	89	95, 172, 177	113
		212			201					

	1950	1951	1952	1953
SUICIDE	180		194	203
method				
geographical				
seasonal				
social class				
trend				203
SURVIVAL FACTORS, EXPECTATION OF LIFE		87		
SYPHILIS (and aortic aneurysm)	5, 59		137	
TETANUS				
THERAPEUTIC MISADVENTURES			212	
accidents in surgical technique				
THROMBOCYTOPENIA				
THYROTOXICOSIS				
TRAINING IN VITAL AND HEALTH STATISTICS				
TUBERCULOSIS (see also NON-RESPIRATORY, RESPIRATORY)	6, 115	5, 157	5, 107	4, 120
comparative mortality indices				
geographical and urban rural variations				
international statistics				
non-respiratory				126
morbidity and notifications	119	160	109	
mortality	119	160	110	136
regional	122	161		
respiratory				120
geographical	120	161	110	133
morbidity and notifications	116	157	107	129
mortality	117	158	107	130
mortality by social class			112	
TUMOURS, INTERNATIONAL HISTOLOGICAL CLASSIFICATIONS				
TUMOURS, MALIGNANT (see CANCER)				
TYPHOID AND PARATYPHOID FEVER	5, 60	131		
TYPHUS				
ULCER OF STOMACH AND DUODENUM				
ULTIMATE FAMILY SIZE, CHANGES				
UNITED KINGDOM (see also BIRTH RATES)		268	234	227
UNITED NATIONS (Commissions, Economic and social council)			242	234
general assembly				236
population commission		270		234
statistical commission			242	235
VACCINATION ASSOCIATED WITH DEATH	179	236	212	220
VASCULAR DISEASES (see CARDIO-)				
VASCULAR LESIONS AFFECTING CENTRAL NERVOUS SYSTEM				
VIOLENT DEATHS AND ACCIDENTS	7, 173	6, 225	5, 188	4, 198
according to nature of injury	178	229	197	
seasonal				207

1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
167	170 172	165 167	169 170	151 153 151	153 155 153	172, 203 174 172	240 263 255 248 252	149 151 149	152 154 152	158 160 158
167	171	165	169	152	154	173	240	150	153	159
108	191	210 4, 230	182	161 172, 175	188 192	210 213 245	271 274	247 261, 275 275	209 214, 228 215 169	179 189, 195 195
4, 111 112 112	109, 193 113	3, 104	2, 92	63						
	114	108	95							
114	114	110	98	119	121	141	147	117	120	126
113	120 120	109 110	97 98	118	120	141	147	117	120	126
	110	104	92			187				
112	116, 118	112	99	113	115	136	142	112	117	123
112	110	107	103	115	117	138	144	114	116	121
111	113	105	93	113	115 217	136	142	112	117	121
				83	88 184	111 206	117 267	87 243	94 206	100
		189		66		198		58		
206 213	220 227	254 261	202 209 211	193 195	220 224	236 239	300 305 307	287	242	209
213 213	227	261 261	209	195 195	224	239 240	305			
191	191	209	181	161	190	211	272	251	210	179
4, 165	4, 161	187 3, 156	150 2, 162	65 67	142	89, 161 93 95	229	138 230	142 189	149

	1950	1951	1952	1953
VIRUSES, DEATHS ATTRIBUTABLE TO				
VISITORS		278	244	239
VITAL AND HEALTH STATISTICS (CONFERENCES OF NATIONAL COMMITTEES, TRAINING COURSE, SEMINAR)				237
VITAL STATISTICS, GREAT BRITAIN, IRELAND and UNITED KINGDOM survey of sources and production		268	234	227
WATER TRANSPORT ACCIDENTS				200
WEATHER	218	311		
WESTERN EUROPEAN UNION (see also COUNCIL OF EUROPE)				
WHOOPING COUGH	64	134, 138		
WIDOWHOOD		78	2, 58	48
WINDOW CLEANERS, DEATHS FROM FALL				
WORLD CONGRESS OF PSYCHIATRY				
WORLD HEALTH ASSEMBLY	210, 217	277	243	236
WORLD HEALTH ORGANISATION (WHO)	209	274	243	236
centre for classification of diseases		274		238
executive board	210	277		236
expert committee on health statistics	209	275, 280		
regional committee of Europe				
statistical publications	211			
WORLD POPULATION CONFERENCE				
YEARS OF LIFE LOST DUE TO SPECIFIED DISEASE				

1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
										83
219	233	267	215	201	232	247	309			
						243				
206	220	254	202	193	220	236	300	287	242	209
									2	
	170									
					229					
				83	88	111	117	87	94	100
48	55	60	45	25	39	39	55	32	63	50
									198	
			215							
216	231	264	212	200	227	242	307			
214	230	264	212	197	227	242	307			
215	232	266	213	199	228	245	308			
215		264	212	199	228					
215		265	213	197			308			
	231				228	242				
217										
						183				

Census 1961

Report on Scientific and Technological Qualifications, Great Britain	6*s.* 6*d.* (7*s.*)
Report on Welsh Speaking Population, Wales including Monmouthshire	10*s.* (10*s.* 7*d.*)
Great Britain Summary Tables	39*s.* (40*s.* 3*d.*)
Report on Isle of Man:	
Part I Population and Housing	6*s.* 6*d.* (7*s.*)
Part II Migration, Economic Activity and Other Topics	6*s.* (6*s.* 6d.)
Report on Jersey, Guernsey and Adjacent Islands	21*s.* (21*s.* 10*d.*)

ENGLAND AND WALES

Preliminary Report	7*s.* 6*d.* (8*s.* 2*d.*)
Usual Residence Tables	12*s.* (12*s.* 7*d.*)
Age, Marital Condition and General Tables	22*s.* (22*s.* 10*d.*)
Birthplace and Nationality Tables	15*s.* (15*s.* 9*d.*)
Housing Tables:	
Part I Buildings, Dwellings and Households	30*s.* (31*s.* 1*d.*)
Part II Tenure and Household Arrangements	30*s.* (31*s.* 1*d.*)
Part III Local Housing Indices	11*s.* (11*s.* 7*d.*)
Commonwealth Immigrants in the Conurbations	25*s.* (25*s.* 11*d.*)
Occupation Tables	55*s.* (59*s.* 6*d.*)
Industry Tables:	
Part I	48*s.* (52*s.* 6d.)
Part II	33*s.* (34*s.* 6*d.*)
Migration Tables	67*s.* (71*s.* 6*d.*)
Education Tables	24*s.* (24*s.* 11*d.*)
Socio-Economic Group Tables	24*s.* (24*s.* 11*d.*)
Workplace Tables	58*s.* (62*s.* 6*d.*)
Household Composition Tables	67*s.* (71*s.* 6*d.*)
Greater London Tables	15*s.* 6*d.* (16*s.* 3*d.*)
Fertility Tables	58*s.* (62*s.* 6*d.*)
Index of Place Names	£5 per set of two volumes (not sold separately) (107*s.* 6*d.*)

Prices in brackets include postage

Published by

HER MAJESTY'S STATIONERY OFFICE

and obtainable from the Government Bookshops in London (post orders to P.O. Box 569, S.E.1), Edinburgh, Cardiff, Belfast, Manchester, Birmingham and Bristol, or through any bookseller

The Registrar General's
Statistical Review of England and Wales
for the Year 1961

Supplement on Cancer

This volume contains survival data for cases of cancer of the cervix, uterine body, prostate, testis, and leukaemia, based on 1952–53 registrations under the National Cancer Registration Scheme, using, in certain instances, 1948–49 cases for purposes of comparison. The registrations in 1948–49 are also used for an examination of survival in the second five years after treatment for several sites, and registrations in 1954–55 in discussion of the effect on the prognosis of breast cancer of delay in seeking treatment.

Appendix tables give the number of newly diagnosed cases of cancer registered in 1961 by site, age, sex and area (urban or rural).

Price **7s. 6d.** net (*By post* **8s.**)

Published by

HER MAJESTY'S STATIONERY OFFICE

and obtainable from the Government Bookshops in London (post orders to P.O. Box 569, S.E.1), Edinburgh, Cardiff, Belfast, Manchester, Birmingham and Bristol, or through any bookseller.

WELLCOME LIBRARY

MINISTRY OF HEALTH
AND GENERAL REGISTER OFFICE

Report on Hospital In-patient Enquiry for the year 1963

Part I: Tables

This volume, one of an annual series, contains detailed tables based on a ten per cent sample of discharges (including deaths) in 1963 from National Health Service hospitals (other than psychiatric hospitals) in England and Wales. It includes analyses by age, sex and hospital region of residence of hospital patients, by source of admission, diagnosis and duration of stay in hospital.

Price 31*s. net* *By post* 35*s.* 6*d.*

Published by

HER MAJESTY'S STATIONERY OFFICE

and obtainable from the Government Bookshops in London (post orders to P.O. Box 569, *S.E.*1), *Edinburgh, Cardiff, Belfast, Manchester, Birmingham and Bristol, or through any bookseller.*

© *Crown copyright 1968*
Printed and published by
HER MAJESTY'S STATIONERY OFFICE
To be purchased from
49 High Holborn, London W.C.1
423 Oxford Street, London W.1
13A Castle Street, Edinburgh 2
109 St. Mary Street, Cardiff CF1 1JW
Brazennose Street, Manchester 2
50 Fairfax Street, Bristol 1
258/259 Broad Street, Birmingham 1
7–11 Linenhall Street, Belfast BT2 8AY
or through any bookseller

Printed in England

S.O. Code No. 70–141–3–65*